THE OIL WEEKLY

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The Oil Man's Calendar

AUG. 1- 6	The Eastern United States Michigan Oil & Gas Exposition, Mt. Pleasant, Michigan.
SEPT. 4- 8	American Society of Mechanical Engineers, New York.
5	Oil Workers International Union, Hammond, Ind.
11-15	American Chemical Society, Boston, Mass.
13-15	National Petroleum Association, Atlantic City, N. J.
OCT. 4- 6	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Texas.
5- 7	Texas Mid-Continent Oil & Gas Association, Houston, Texas.
9-10	American Gas Association Annual Convention, New York.
16-20	National Safety Congress, Atlantic City, N. J.
18-20	Independent Petroleum Association of America, Fort Worth, Texas.
19-20	A. I. M. E. Petroleum Division, Los Angeles.
NOV. 13-17	American Petroleum Institute, Stevens Hotel, Chicago.
15-17	American Institute of Chemical Engineers, Providence, R. I.
DEC. 4- 7	American Society of Mechanical Engineers, Philadelphia.
APR. 11-12	American Petroleum Institute, Eastern District, Division of Production, Columbus, Ohio.

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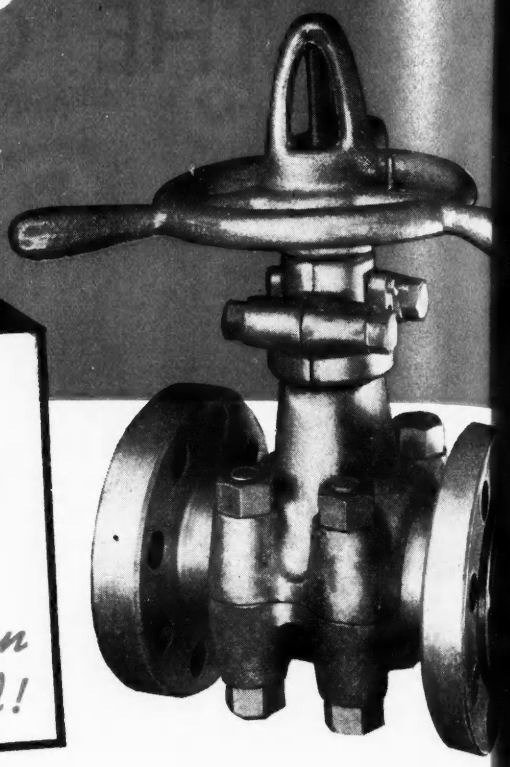
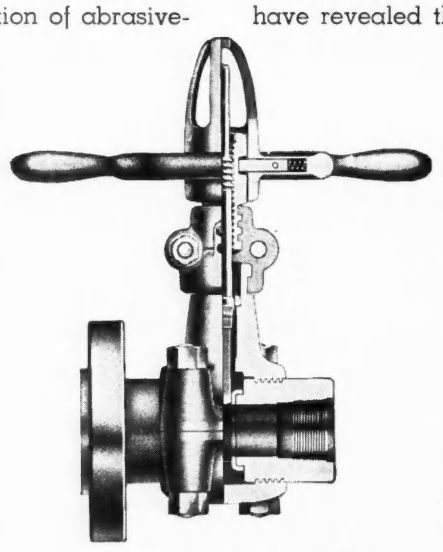
MUD VALVE

This
RESILIENT FLOW-WAY INSERT
absorbs the cutting action of abrasive-laden fluid!



The remarkable capacity of Cameron Flex-Seal Mud Valves to withstand the destructive action of abrasive-laden fluid, moving at high pressure and velocity, is attributed to the unique renewable resilient flow-way insert.

At a very slow rate of wear, this rubber insert absorbs the cutting action of abrasive-laden fluid, and provides a leak-proof seat for the gate. Cuttings, or other foreign matter, are readily embedded in the resilient insert upon closing the gate. And even though the gate may be sand-cut or damaged, after long service, a positive shut-off is effected when it is embedded in the insert. Further, a lip moulded integrally on the insert efficiently seals the two-piece body of the valve. When the resilient insert is finally worn out, it may be replaced, quickly and at low cost, in the field.



Cross-section view of a Cameron Flex-Seal Mud Valve, showing its design and construction

Unbiased tests, under the most severe field conditions, have revealed that the Cameron Flex-Seal Mud Valve actually requires 93% less maintenance than conventional types of mud valves. It opens and closes easily under 6000 lbs. pressure. The hubs of the valve swivel freely when making connections, permitting the valve to be used as a union when breaking down a manifold. Hubs may be fitted with threaded, flanged, welded-on, or any special connection desired on the outer end.

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This Week's Panorama

THE oil industry's statistical position, which of late has tended to become increasingly clouded due to insufficient seasonal reductions in inventories as high output existed at both wells and refineries, improved considerably last week as gasoline and crude stocks were drawn upon. However, the situation still fails to be favorable, and will continue in this condition unless there is a continuation of the accelerated rate of reduction of gasoline inventories during the remainder of the high consumption season.

Smaller Refinery Operations Reduce Gasoline Stocks

Runs to refinery stills declined 30,000 barrels daily during the week ended July 15, latest period for which statistics are available. However, in averaging 3,390,000 barrels daily, they were 6 percent above the rate of a year ago.

The reduction in refinery operations caused gasoline production to drop 7900 barrels to 1,617,100 barrels daily, at which level it was 85,900 barrels smaller than during the week ended July 1.

In view of the lower gasoline output, stocks of this commodity were estimated to have declined to total 79,416,000 barrels at the end of the week. While this represented a reduction of 1,407,000 barrels from the preceding week, they were still 0.9 percent greater than a year ago, when an excessive quantity caused prices to suffer.

Crude oil storage continued to decline, and for the first time went below the level on hand January 1, 1939. These stocks totaled 269,348,000 barrels on July 9, or 7 percent less than at this time last year.

Refiners Charged with Defeating Conservation

Excessive refinery operations, as now existing in the industry, are "directly opposed to sound conservation of oil." This was the charge of Charles F. Roeser, president of the Independent Petroleum Association of America at the Interstate Oil Compact meeting in Santa Fe, New Mexico, last week.

"These excessive runs have created a temporary and artificial demand for crude oil," he continued in pointing out that refinery operations must be slowed down so that gasoline stocks may be reduced materially, and that when refiners take this necessary step crude production rates must be lowered also.

The responsibility for this situation, he said, rested "primarily with 15 integrated companies" operating chiefly on the East Coast, the Gulf Coast and in the Middle West.

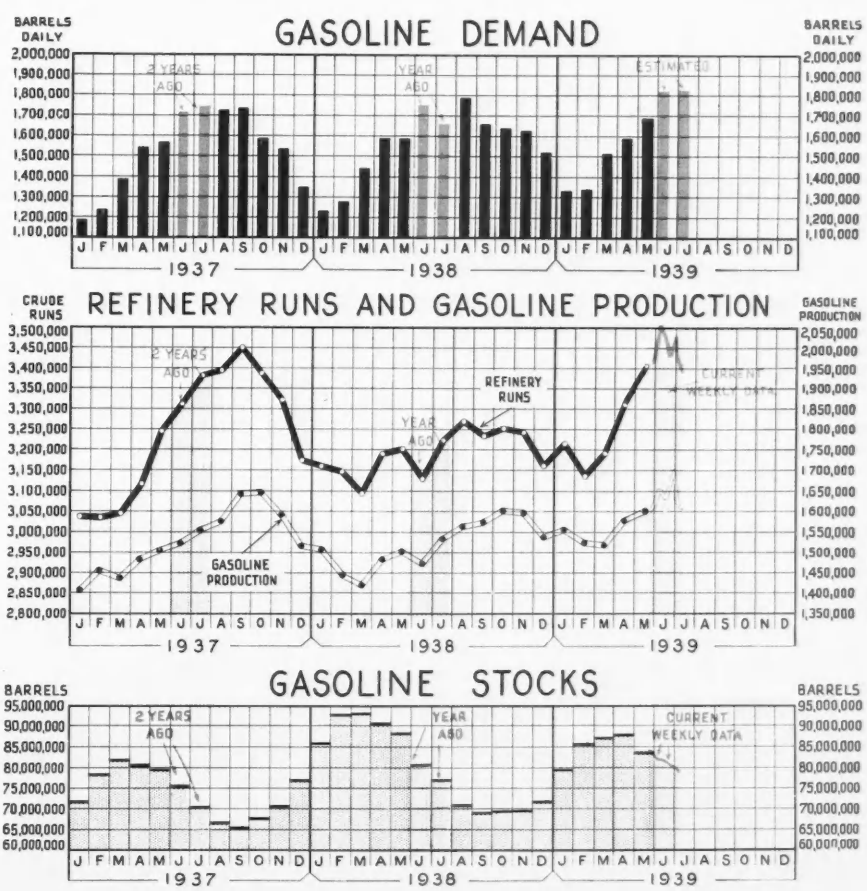
Oil Becomes Involved in Louisiana Probe

Oil entered Louisiana's sensational political scandal and probe last week, when a special investigator for the Department of Interior arrived to delve into possible violations of federal oil regulations.

The State of Louisiana, under the direction of its new governor, Earl K. Long, also is looking into the oil situation. This may lead to new policies in the control of oil and gas production. Already, it has resulted in the appointment of

Gasoline Stocks Reduced at Accelerated Rate

Storage is reduced 867,000 barrels in week ended July 15, as retarded runs to stills curtail refinery output.



a new conservation director, David McConnell succeeding Dr. J. A. Shaw.

Rumors were current that some situations as flagrant as those that have caused a handful of leading politicians to be indicted for misuse of funds from the state university, WPA, etc., would be exposed.

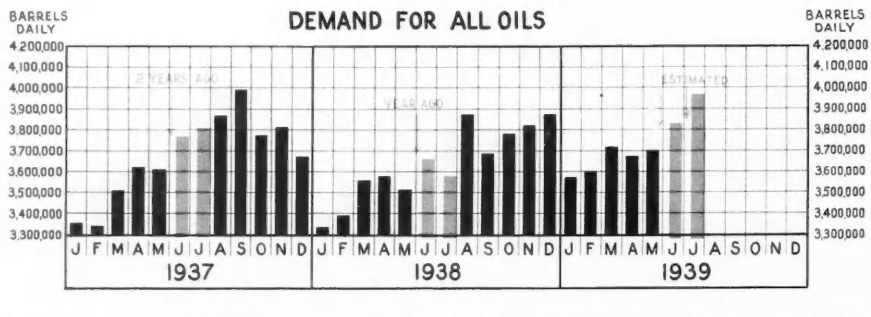
For some time other states, particularly Texas, have been pointing an accusing finger at Louisiana's allowable production. During 1938 wells in the state averaged 50.9 barrels daily per well, while Texas was being curtailed to 14.8 barrels per well per day. This would not constitute a violation of federal oil regulations, but it was the claim of Texas that its neighbor was not acting in good faith with the conservation movement.

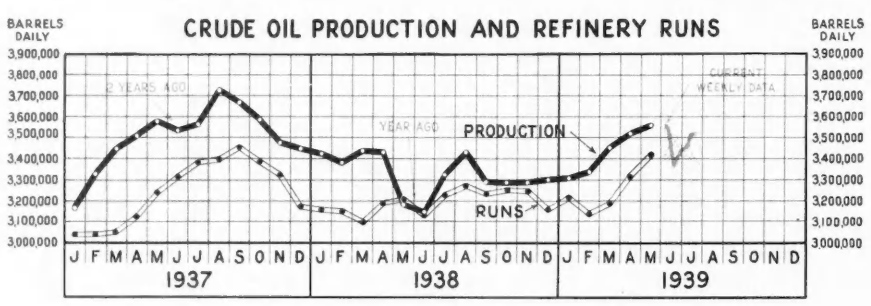
Today reports are in circulation that much more oil has been produced, much of it in excess of state allowables, and that certain areas and leases have been favored by state officials because of alleged personal investments.

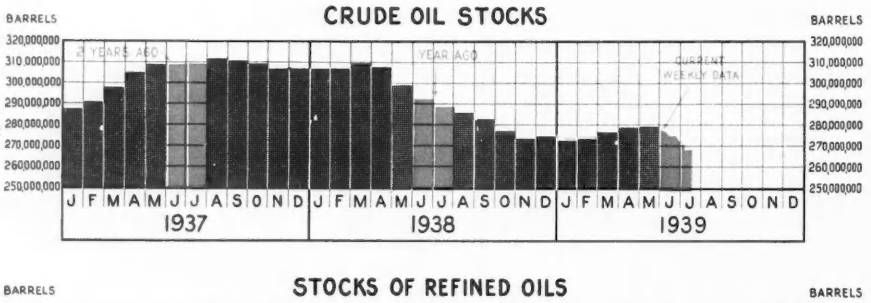
Meanwhile, the state treasurer, A. P. Tugwell, released a statement saying some supply firms doing business in Louisiana were required to bill their sales through a Houston firm, which obtained a 10 percent commission. He charged an attorney for the Louisiana Department of Conservation was state representative for the unnamed Houston concern.

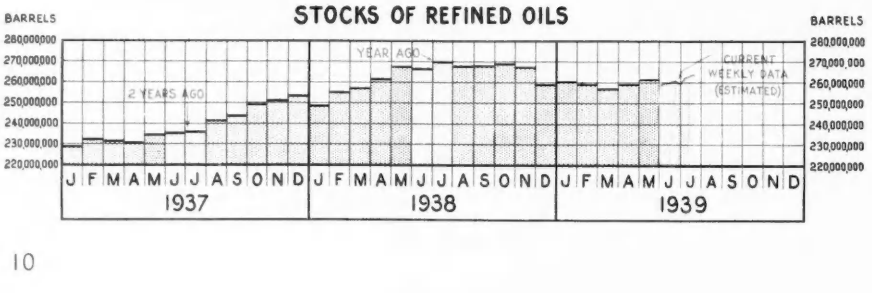
Crude Stocks Drop Despite Large Production

Reduction in runs to stills and continued heavy production at wells is offset sufficiently by large demand.









Streamline, Lightweight Trains Making Money

The first of the American lightweight, streamlined trains went into service in 1934. About 80 of them now are operating on some 20 railroads. They were, and still are, a new development in the long and romantic story of American transportation. However, the most striking thing about them, perhaps, is the fact that every lightweight, streamlined, high-speed train operating in the United States has meant additional passenger traffic and substantial earnings for the railroad placing it in service.

Certainly not so much can be said for the older type of American passenger trains. The passenger business in these United States has been sick for a long time.

The stainless steel, lightweight Zephyrs, moving between Chicago and Denver, showed the highest ratio of earnings for any train of the new type, for the year ending June 30, 1938. With a gross revenue of $2,088,938 these trains earned a net of $1,568,831. This was 75.1 percent of the gross or $2.07 per train mile.

The high-speed streamlined Hiawathas, between Chicago and the Twin Cities, had a gross revenue of $1,337,898, with net earnings of $3.22 per train mile or 74.1 percent of the gross.

Usually the new trains show a steady increase in revenues for a considerable period after going into service. The El Capitans, between Chicago and Los Angeles, went into action in February, 1938. They produced $8000 in revenues that month; $38,000 in March; $49,000 in April; $83,000 in May and $101,000 in June.

Undoubtedly the day of the old-time coach service is just about over. While the new trains are not the answer to the railroad passenger problem everywhere their showing in earnings and popularity seems to be an excellent answer to the question "What can the railroads do to help themselves?"

And, this trend toward the modern streamline, lightweight, high-speed train will assist the petroleum industry. A new market for its products is being provided, as these new trains are Diesel or Diesel-electric powered.

Diminishing Well Returns Acute Problem in Kansas

By FRANK B. TAYLOR, Staff Writer

THE problem of steadily diminishing revenue from producing wells nearing the minimum economic level at which they can be operated, one which confronts a great many flush oil areas of the United States, has become acute in Western Kansas.

It is a situation in which the rates of discovering new fields and the ability to produce is exceeding the gain in market demand, with the result that per well allowables are becoming constantly smaller and pipe line connections no longer are obtained easily. A solution for the problem must be found, since producing operators cannot exist on revenues that do not return a reasonable amount on their investment.

Drilling Hampered

Both exploratory activity and the development of already discovered new reserves in Western Kansas is being hampered seriously by the lack of adequate pipe line facilities. Moreover, there appears little hope for improvement as the situation grows steadily more distressing. Consequently, it is likely that an area having marked possibilities for yielding additional production, from both known fields and probable new discoveries, is to be relegated temporarily to the background.

Today, 24 of the fields lying along the Central Kansas Uplift are not served by any pipe line. Production must be disposed of by tank car, truck, or to local refineries—if at all. Six of the pools have no type of disposal, seven make use of tank cars and 11 are trucking production to outlets. Four local refineries afford producers within close proximity an opportunity of disposing of some production, but these plants have a daily capacity of only 5150 barrels.

Although none of the fields have been defined, and development is limited to an average of but 5 wells to the pool, they have a daily potential of 61,741 barrels. Total monthly allowable awarded the 24 fields by the State Conservation Commission is 140,297 barrels, 4640 barrels daily or three percent of the state's present daily recovery of 168,000 barrels. No doubt many of the fields would cover a much larger area than at present if development were not retarded, and it is probable a number of them would prove productive in additional pay formations, for this is characteristic of the district. However, only three of the 24 fields are producing from more than a single pay.

WESTERN KANSAS COMPLETIONS DROP 39 PERCENT

COUNTY	First Five Months, 1938	First Five Months, 1939
Barber	15	4
Barton	125	71
Clark	2	..
Ellis	75	23
Ellsworth	19	27
Grant	9	..
Harper	1	..
Harvey	12	5
Kearney	2	..
Kingman	1	4
McPherson	32	21
Meade	1	..
Ness	3	..
Pawnee	5	..
Phillips	1	..
Pratt	7	5
Reno	23	12
Rice	64	66
Rooks	13	6
Rush	4	1
Russell	120	74
Scott	1	1
Sedgewick	13	7
Stafford	74	56
Stevens	8	2
Sumner	13	7
Total Western Kansas	643	392

Uplift Development Rapid

Furthermore, the district has distinct possibilities for the discovery of additional producing areas. The site of the present fields generally coincides with the position of the Central Kansas Uplift, most pronounced geologic feature of the western half of the state, which extends 100 miles northwest by southeast and averages 30 miles in width. However, all indications point to the finding of fields off the uplift as well, if and when tested with the drill. Development along the uplift has been rapid during the past eight years. There has been an exceptionally high rate of discovery along it, a multitude of closely located fields having been found. Consequently, development has been localized to this geologic feature, and exploratory work has been confined largely to an investigation of areas immediately adjacent to production, while activity off the uplift has been minimized.

The outgrowth is the result of several factors. Production in-

Western Kansas Pools Without Pipe Line Connections

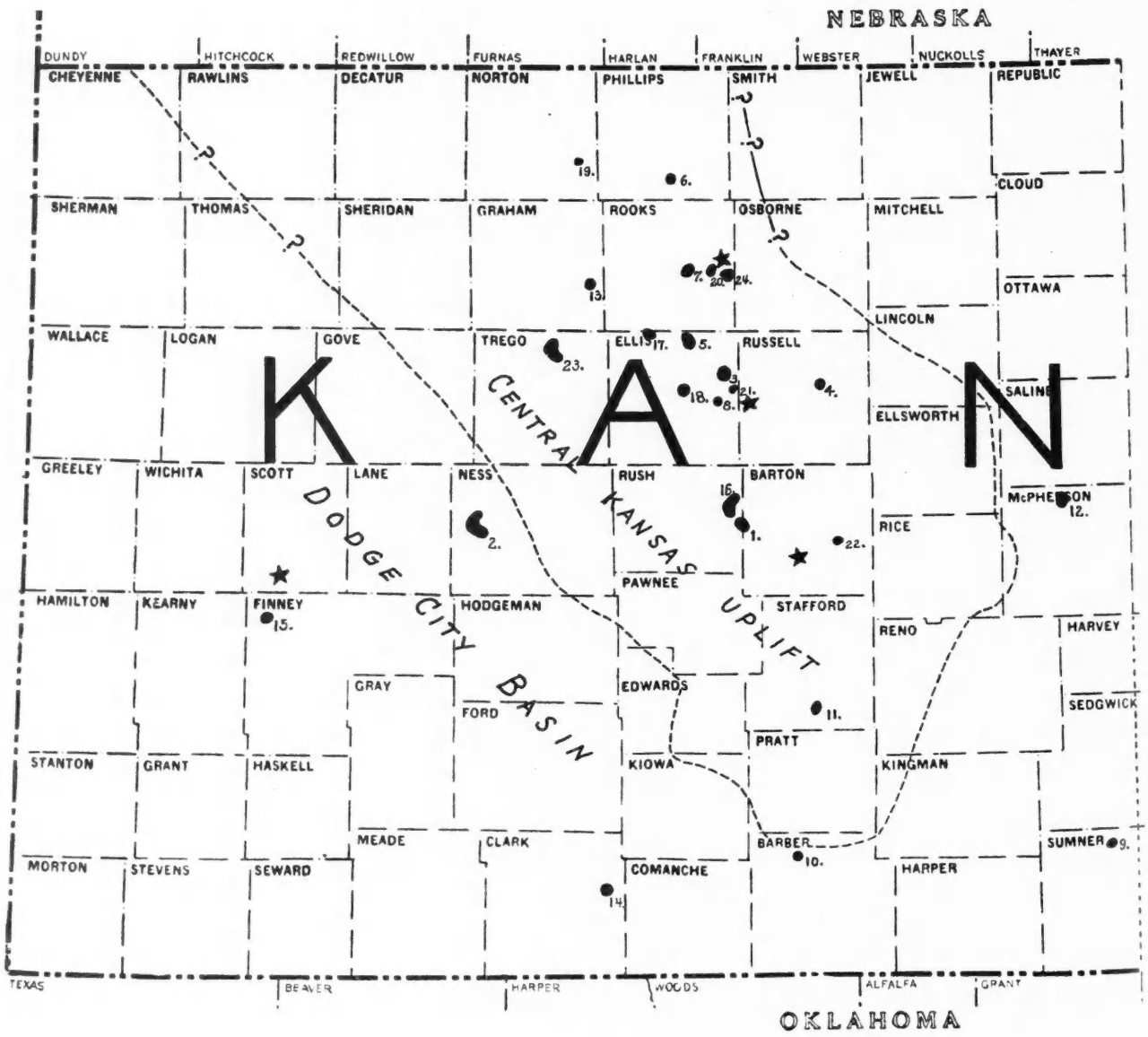
No *	Pool	Producing Formations	Wells	County
1	Albert	Regan Sand	11	Barton
2	Aldrich	Mississippi Lime	10	Ness
3	Blue Hill	Topeka; Arbuckle; Kansas City-Lansing; Wilcox	3	Ellis
4	Bunker Hill	Kansas City-Lansing	3	Russell
5	Burnett	Arbuckle dolomite	2	Ellis
6	Bow Creek	Kansas City-Lansing	1	Phillips
7	Dopita	Arbuckle; Kansas City-Lansing	5	Rooks
8	Emmeran	Kansas City-Lansing	1	Ellis
9	Latta	Kansas City-Lansing	9	Sumner
10	Lake City	Arbuckle; Viola	2	Barber
11	Leesburgh	Arbuckle dolomite	6	Stafford
12	Linsborg	Viola lime	2	McPherson
13	Morel	Arbuckle	4	Graham
14	Morrison	Simpson	2	Clark
15	Nunn	Mississippi lime	1	Finney
16	Otis	Regan sand	17	Rush
17	Richards	Kansas City-Lansing	2	Ellis
18	Ubert	Arbuckle dolomite	4	Ellis
19	Unnamed	Kansas City-Lansing	1	Norton
20	Westhusin	Kansas City-Lansing	7	Rooks
21	Windholz	Kansas City-Lansing	1	Ellis
22	Wolf	Arbuckle dolomite	1	Barton
23	Wakeeney	Kansas City-Lansing	12	Trego
24	Laton	Kansas City-Lansing	10	Rooks

Number of pools here indicated are in agreement with those indicated on accompanying map.

Twenty-four western Kansas fields, all west of Range 1, without established pipeline outlets are shown on the map. The pools represent a total of 117 wells; a daily potential of 61,741 barrels. Stars on the map indicate location of local refineries (combined capacity 5150 barrels daily) that take some of the crude from nearby fields. Numbers on the map coincide with those shown in table.

creased so rapidly as new fields were opened that existing transportation facilities were exceeded. Enlarged pipe line systems have not been constructed because of diminishing market demand, as other territories more favorably situated with respect to heavy consuming centers and outlets, particularly new fields in the Illinois Basin district, have developed important new production sources.

In addition, all Western Kansas, like other states, has experienced diminishing per well allowables in recent years, lengthening the payout period materially. On June 1, 1935, the 1700 wells in the region had an average allowable of 60 barrels daily. By June, 1937, this had declined to 40 barrels, while



June, 1939, finds 5700 wells averaging but 24 barrels per well daily.

Curb on Development

Consequently, there has been a serious curb on Western Kansas exploration and development. Completions in Western Kansas have slumped to 392 during the first five months of 1939 as compared with 643 in the corresponding period of 1938. Many planned tests have been abandoned. Although some wells have been drilled and some have proven new reserves, it has become increasingly desirable to base drilling site selections on transportation facilities as well as favorable geology. It was expected that increased demands and normal depletion of older fields would allow outlets for some of the more westerly development and exploration. So far this has not been the result, and the well-connection condition has been intensified rather than alleviated in the past two years.

In a search to find some solution for the perplexing problem, some operators in the district have suggested wider well spacing as the answer, and there is considerable discussion of the proposal at this time. By this plan, drilling would be based upon 20-acre spacing rather than the present 10-acre system of development. Such a procedure, in the opinion of many, would permit both wildcatting and proven field development, would eventually provide better well allowables, and would reduce exploitation expenditures.

The average per acre recovery in the area is 5000 barrels, giving an ultimate yield of 50,000 barrels to the well on a 10-acre spacing plan. This does not afford an attractive margin between well costs and investment returns, as wells cost from $40,000 to $50,000.

While not universally used in the area, the trend toward the application of wider well spacing is clearly evident in several newer Western Kansas projects.[1] Besides 20 and 40-acre spacing in some fields, some operators with sizeable tracts have adopted a modified wider well spacing program that increases spacing to 13-acre units. This is being applied in some fields already partially developed on 10-acre spacing. Wells on the boundary of the tracts are located on regular 10-acre spacing, but inside wells are spaced on 13-acre units. Such a plan reduces the number of wells on 80-acre leases by 2, while 4 wells are saved on 160 acres.

Future Depends on Market

When the well connection and market demand situation is improved sufficiently to permit exploratory drilling, Western Kansas should be the scene of many additional discoveries. Exploratory work in the northern part of the Dodge City Basin, which roughly parallels the Central Kansas Uplift to the southwest, has proven wide distribution of the formations generally productive in the district. Tests drilled in eastern Colorado have encountered the same strata with favorable showings, although having a tendency to be less porous. Wells drilled on the problematical extension of the Kansas Uplift toward Nebraska also have logged the same formations, as have tests on the northeast edge of the uplift in Phillips, Smith, Osborne and Rooks counties. Prospective value of these counties has been proven through two recent pool openers, one in Norton County and the other in Phillips County, both producing from the Kansas City-Lansing zone.

Seven possible producing formations are represented (see accompanying table of unconnected fields), and all these with perhaps the exception of the Wilcox and Regan sands, might normally be expected in the undeveloped section of western Kansas. Depths to pay horizons may exceed those on the uplift by 600 to 1000 feet, depending upon the location, but should not be deeper than 5500 feet. Structural conditions are apparent from the surface, and subsurface and geophysical work have disclosed anticlines not detectable from the surface. It may be that a greater closure will be required to cause the accumulation of oil in the area off the uplift than on the uplift proper, where only a few feet of closure is sufficient for commercial production to be obtained. Successful wildcats completed off the uplift apparently justify these conclusions.

[1] "Wider Well Spacing Development Practice Spreading in Kansas," by Jos. A. Kornfeld, The OIL WEEKLY, October 3, 1938.

Deep Drilling Progress Number Next Week

A symposium of individual opinions on a multitude of subjects associated with deeper drilling will be placed before readers of The OIL WEEKLY of July 31 as a result of the industry's gracious response to hundreds of letters sent out by the editorial staff to engineers and executives asking them what they thought about this and that subject, method, or practice. An informal presentation of the thoughts of leading technologists on deep drilling and related subjects is a feature of the "Deep Drilling" issue to which you will look forward with pleasure. It will be one that you will want to file for frequent reference.

U. S. Drilling Deeper Outside Illinois and Michigan

By L. J. LOGAN, Associate Editor

ALTHOUGH unusual circumstances have arisen and caused an apparent reversal this year of the trend toward greater drilling depths, the oil industry still is in an era of deep drilling. And it may be confidently expected that as the years unfold, the average drilling depth in the United States will gradually become greater and greater.

In the first half of this year, the average depth of all wells completed in the country was only 3119 feet, as compared with 3182 feet for those drilled in the first six months of last year and 3144 feet for all completions in 1938.

These figures indicate a reversal of the four-year trend toward greater average depths from 1934 through 1938.

But the change of trend has resulted, like various other exceptional situations in the industry lately, from the current, tardy development of the relatively shallow, new fields of Illinois and southwestern Michigan.

Shallow Areas Active

For more than 15 years, new wells in the United States have averaged around 3000 feet in depth. Yet in 1939 Illinois has come forth with a drilling boom in which hundreds of wells have been completed at an average depth of approximately 1850 feet. Similarly, Michigan in the first half of this year furnished 653 new wells that averaged only 1704 feet in depth, as new, shallow fields in the southwestern part of the state were developed.

Outside Illinois-Michigan

To determine exactly how much Illinois and Michigan have affected the average drilling depth in the United States, data on completions and footage drilled in those two states have been deducted from the totals for the United States in both 1938 and 1939. And it has been found, thereby, that for the country as a whole, exclusive of Illinois and Michigan, the average drilling depth in the first half of 1939 was 203 feet greater than that for the first half of 1938.

Average Drilling Depth in U. S. Smaller This Year

YEAR	Wells Completed	Footage Drilled	Average Depth per Well
1925	25,406	73,677,400	2900
1926	28,995	81,186,000	2800
1927	22,301	66,903,000	3000
1928	19,964	59,892,000	3000
1929	23,463	67,925,285	2895
1930	19,848	57,557,200	2900
1931	11,716	34,259,110	2924
1932	14,290	43,033,422	3011
1933	12,170	36,904,500	3032
1934	18,949	51,748,906	2731
1935	22,669	64,112,400	2829
1936	26,935	77,071,920	2861
1937	33,112	99,922,908	2974
1938	27,528	86,485,040	3144
First 6 Months:			
1938	13,687	43,554,136	3182
1939	12,091	37,707,717	3119
Change	—11.7%	—13.4%	—0.2%

Outside of Illinois and Michigan, 12,843 wells with combined depths of 41,504,421 feet were drilled in the first six months of 1938, indicating an average depth of 3232 feet per well; and in the first six months of this year, 9729 wells with combined depths of 33,420,455 feet were completed, the average depth having been 3435 feet.

Average Still Large

Even with data for Illinois and Michigan included, the decrease in the average drilling depth for the United States has not been great.

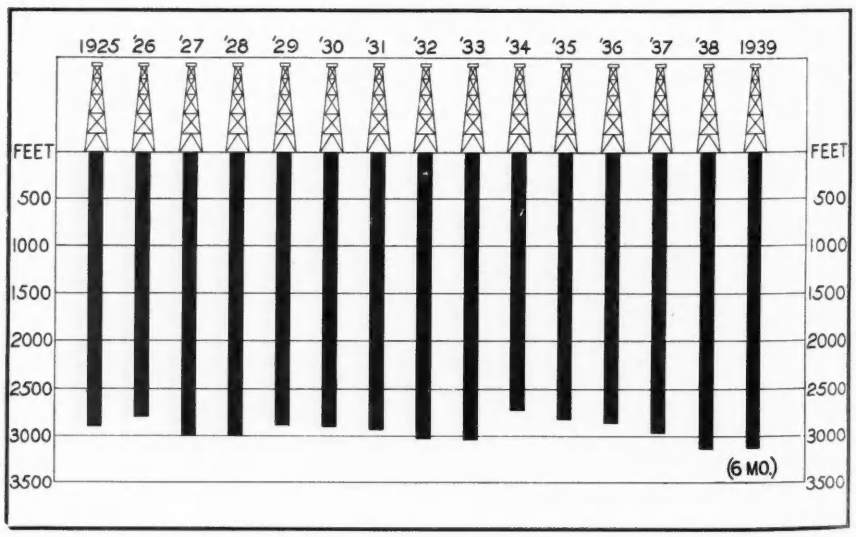
Although the 3119-foot average for the first half of this year compared with 3182 feet for the corresponding period last year, it was not materially smaller than the full year's average of 3144 feet for 1938.

And this year's 3119-foot average drilling depth is greater than the average for either of the four years prior to 1938, as indicated in an accompanying table.

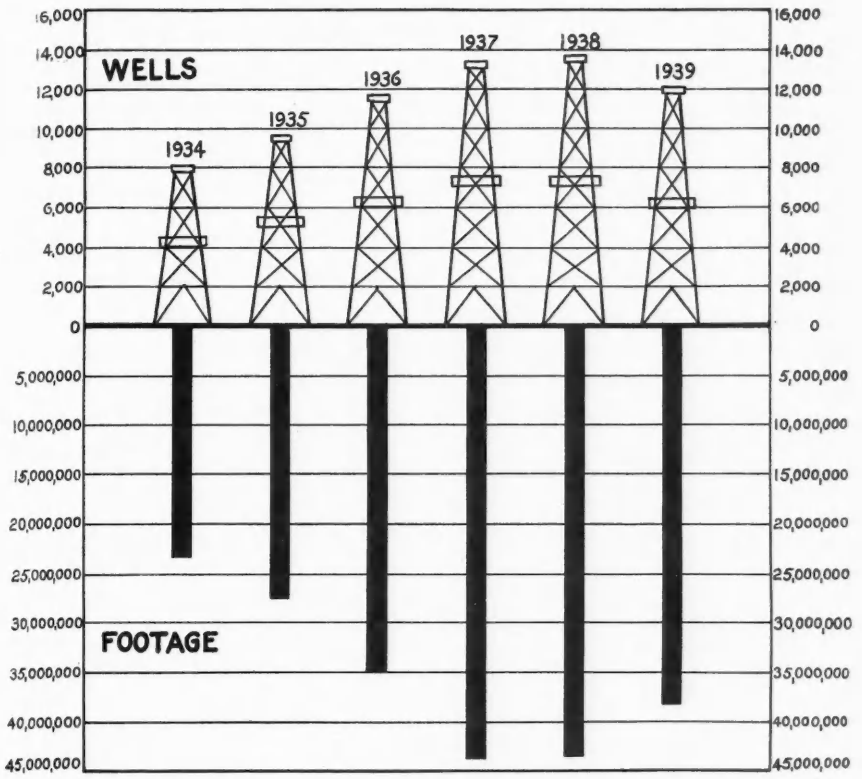
Crude Prices Reflected

Another cause for the temporary interruption of the trend toward

New Wells in U. S. Average Less in Depth in 1939



Wells and Footage Drilled in U. S. in First 6 Months



greater drilling depths this year, aside from the shallow development in Illinois and Michigan, has been the general curtailment of drilling. Largely because of somewhat lower prices for crude oil, following the general reductions last October, both field development and prospecting have been reduced this year. And the curtailment or elimination of drilling naturally has affected particularly the areas of deeper pay zones. Deeper wells normally are more expensive, and when crude prices become less attractive, the inducement to drill to the deep zones is reduced.

The retarding influence of lower crude prices on deep drilling has been demonstrated, for example, on the Gulf Coast of Texas, an outstanding deep-drilling region. Completions in that area were only 4.8 percent lower in the first half of 1939 than in the corresponding period of 1938; but footage drilled was off 7.8 percent, as the average drilling depth receded 3.1 percent, from 6119 to 5928 feet.

The 1857-foot average depth of Illinois completions for the first half of this year compared with an average for that state of 1999 feet in the corresponding period of last year, a decrease of 7.1 percent.

Michigan's average depth was off, similarly, 41.3 percent, from 2904 to 1704 feet.

North Louisiana has had substantially shallower drilling this year than last year, as the recent development of several deep fields has not been replaced by opening of other deep areas.

Other states and districts where the average drilling depth was lower in the first half of 1939 than in the like period of 1938 included: Arkansas, Colorado, Kansas, Eastern Texas outside the East Texas field, North Texas, the Laredo and San Antonio areas of Southwest Texas, the Texas Panhandle, and West Central Texas.

Completions, Footage Drilled, and Average Depths at Mid-Year All Under 1938 Levels

STATE OR DISTRICT	COMPLETIONS			FOOTAGE DRILLED			AVERAGE DEPTH		
	1939 1st Half	1938 1st Half	Percent Change	1939 1st Half	1938 1st Half	Percent Change	1939 1st Half	1938 1st Half	Percent Change
Arkansas	110	115	— 4.3	673,065	707,111	— 5.2	6,111	6,151	— 0.6
California	508	671	— 24.3	2,730,450	2,724,899	+ 0.2	5,380	4,051	+ 32.8
Colorado	11	5	+120.0	33,207	26,161	+ 27.0	3,022	5,225	— 42.2
Eastern States	3,592	3,163	+ 13.5	6,801,459	5,172,838	+ 21.5	1,893	1,635	+ 15.8
Illinois	1,709	444	+286.0	3,174,427	887,902	+157.5	1,857	1,999	— 7.1
Indiana	84	54	+ 55.5	148,594	63,513	+133.9	1,768	1,176	+ 50.3
Kentucky	293	326	— 10.1	422,749	377,324	+ 12.0	1,442	1,157	+ 24.6
New York	231	385	— 40.0	369,464	519,750	— 28.91	1,599	1,350	+ 18.4
Ohio	400	438	— 8.7	830,580	804,256	+ 3.2	2,076	1,836	+ 13.0
Pennsylvania	633	1,175	— 46.1	1,189,855	1,586,255	— 25.0	1,879	1,350	+ 39.2
West Virginia	242	341	— 29.0	665,790	933,838	— 28.7	2,751	2,738	+ 0.5
Kansas	621	888	— 30.1	1,966,985	2,917,108	— 32.6	3,167	3,285	— 3.6
Louisiana	480	527	— 8.9	2,606,495	2,828,524	— 7.8	5,430	5,892	— 7.8
North Louisiana	185	255	— 27.4	734,537	1,196,381	— 38.6	3,970	4,691	— 15.4
South Louisiana	295	272	+ 8.4	1,871,958	1,632,143	+ 12.8	6,345	6,000	+ 5.7
Michigan	653	400	+ 63.3	1,112,835	1,161,813	— 2.9	1,704	2,904	— 41.3
Montana	50	26	+ 92.0	113,922	49,130	+131.8	2,262	1,889	+ 19.2
New Mexico	286	250	+ 14.4	1,092,278	939,283	+ 14.0	3,819	3,757	+ 1.6
Oklahoma	995	1,081	— 7.9	3,016,990	3,197,588	— 5.6	3,032	2,957	+ 2.5
Southeastern States	6	15	— 60.0	24,264	54,215	— 15.0	4,044	3,614	+ 11.9
Alabama	1	1	.....	720	5,214	— 86.2	720	5,214	— 86.2
Georgia	1	1	.....	3,570	.....	.....	3,570	.....	.....
Mississippi	4	11	— 63.8	19,974	45,011	— 55.6	4,993	4,091	+ 22.0
Tennessee	.....	2	—100.0	.....	3,990	.....	.....	1,995	.....
Texas	4,734	6,505	— 27.2	17,261,446	23,652,196	— 27.0	3,646	3,636	+ 0.0
East Texas Field	275	1,147	— 75.9	1,099,375	4,179,080	— 73.7	3,997	3,643	+ 9.7
Rest of East Texas	148	263	— 43.7	581,060	1,201,616	— 51.6	3,926	4,568	— 14.0
North Texas	801	1,263	— 36.6	1,720,439	3,106,628	— 44.6	2,147	2,459	— 12.3
South Texas	1,373	1,376	— 0.2	5,287,864	5,137,578	+ 2.9	3,851	3,741	+ 2.9
Corpus Christi Area	651	602	+ 8.1	3,559,605	3,121,143	+ 14.0	5,467	5,184	+ 5.4
Laredo Area	516	540	— 4.4	1,353,675	1,526,301	— 11.3	2,623	2,826	— 7.
San Antonio Area	206	234	— 11.9	374,585	490,134	— 23.6	1,818	2,094	— 13.2
Texas Gulf Coast	709	745	— 4.8	4,203,075	4,558,832	— 7.8	5,928	6,119	— 3.1
Texas Panhandle	181	318	— 43.2	547,891	967,642	— 43.4	3,027	3,042	— 0.0
West Texas	1,033	1,234	— 16.3	3,519,004	4,199,571	— 16.2	3,406	3,403	+ 0.0
West Central Texas	214	159	+ 34.7	302,737	301,249	+ 0.0	1,414	1,895	— 25.3
Wyoming	45	41	+ 9.8	252,485	133,448	+ 89.2	4,590	3,254	+ 41.0
Total for United States	12,091	13,687	— 11.7	37,707,717	43,554,136	— 13.4	3,119	3,182	— 0.2

Areas of Deeper Wells

Areas other than those mentioned above had greater average drilling depths in the first six months of 1939 than in the corresponding months of 1938. They included California, where the average jumped from 4051 to 5380 feet, as several new, deep fields were being developed; Indiana, where fields similar to those in Illinois are being sought; the Eastern States of Kentucky, New York, Ohio, Pennsylvania, and West Virginia; South Louisiana, the world's foremost deep drilling area; the Rocky Mountain states of Montana, New Mexico, and Wyoming; Oklahoma, where a slight increase was shown; and several districts of Texas, namely, the East Texas field, the Corpus Christi area of Southwest Texas, and West Texas.

Pumping Series Article No. 14

Selection of Equipment Main Problem Confronting East Texas Field Operators

Whether to start with light or heavy equipment, individual units or central powers, are among questions to be solved by production engineers.

By BRAD MILLS, Associate Editor

ALTHOUGH the average East Texas well may be pumped with comparative ease so far, operators in the territory are confronted with a difficult problem in properly selecting equipment. Should wells be equipped with light, less expensive units—powers that will meet current requirements—or would it be wiser to equip them for the probable life of the wells? This is the most difficult pumping question that has confronted East Texas concerns to date; unfortunately it is one that cannot be answered definitely until additional operating data are made available through production records.

16,000 Unequipped

The importance of the question is made more acute by the field's huge size, that something like 16,000 wells remain to be equipped, and that there is expected to be an accelerated demand for pumping installations.[1] East Texas is the largest pumping equipment market in existence today, having more flowing wells than all California and about 60 percent of Texas' flowing producers, and a general miscalculation might easily result in huge investment losses.

Investment for the more substantial equipment often totals twice that for the light units. With the daily per well allowable of 20 barrels not expected to undergo material change at least for some time, it can readily be seen how much this lengthens the pay-out on the investment.

On the other hand, while the lighter, less expensive units will meet requirements as long as the field remains an easy pumping area, it probably will be necessary to replace them with larger equipment in the latter stages of the field's life when it is apt to be a more difficult lifting proposition. Water intrusion will be more general, pressures and fluid levels will be lower. Already water encroachment along the west side has forced a change to heavier equipment in many instances, while light pumping powers have had trouble in handling the high fluid volume in the more troublesome wells.

Equipment Selection

Thus, the East Texas operator is faced with a choice between a temporary or permanent pumping installation when a well first stops flowing. A careful survey of each well to determine its condition goes a long way toward giving the essential data required. Often an operator installs light equipment with the expectation of transferring it to pumping wells in an easier pumped part of the field when it fails to meet increased lifting requirements at its original location. Such a program is feasible where an operator has wells in several parts of the pool. The use of multiple well hook-ups (back crank installations) is another attempt to solve this situation.

Aside from the selection of equipment, East Texas so far has presented but minor actual pumping problems. Formation conditions are fairly uniform all over the field, but such factors as water, fluid level, physical condition of the well, and paraffin are important and will be of greater significance in the future.

The field usually is divided into three sections, when requirements for pumping equipment are considered. These long narrow zones are the east side, west side and middle section of the field.

Wells along the east side produce from a thin sand section, show comparatively low bottom-hole pressures, yield little or no water, and have a low fluid level.

Wells along the west side are in or near the water belt, show high bottom-hole pressures, yield high fluid volumes, and usually stop flowing because of water encroachment.

Wells in the larger middle strip are mostly flowing producers. About half the wells in the field fall within this favored area. They are largely flowing clean oil, have a good reserve of flowing energy, and are more sensibly spaced than the edge wells. The inside wells are protected by position from

[1] "East Texas Expected to Go on Pump at Increased Rate," The OIL WEEKLY, July 17, 1939.

TABLE 1

Summary of East Texas Wells Equipped for Artificial Lift

TYPE OF EQUIPMENT	Wells Operating	Wells Idle	Total Equipped	Percent of Equipped	Percent Idle
†Jan. 1, 1937—					
Standard Rigs	582	688	1,270	21.3	54.2
Pumping Units	806	472	1,278	21.5	37.0
Back Side Cranks	756	288	1,044	17.5	27.6
Central Powers*	1,006	964	1,970	33.0	49.0
Equipment Unknown	82	....	82	1.4	0
Total Equipped for Pumping	3,232	2,412	5,644	94.7	42.7
Gas Lift	293	17	310	5.3	5.5
TOTAL FIELD	3,525	2,429	5,954	100.0	40.8
‡Dec. 1, 1938—					
Standard Rigs	789	666	1,455	15.0	46.0
Pumping Units	1,689	1,266	2,955	30.3	43.0
Back Side Cranks	1,650	510	2,160	22.1	24.0
Central Powers*	1,694	877	2,571	26.4	34.1
Total Equipped for Pumping	5,822	3,319	9,141	93.8	36.8
Gas Lift	601	1	602	6.2	.2
TOTAL FIELD	6,423	3,320	9,743	100.0	34.1
Change §From Jan. 1, 1937, to Dec. 1, 1938—					
Standard Rigs	207	—22	185	....	....
Pumping Units	883	794	1,677	....	....
Back Side Cranks	894	222	1,116	....	....
Central Powers*	688	—87	601	....	....
Equipment Unknown	—82	....	—82	....	....
Total Equipped for Pumping	2,590	907	3,497	....	....
Gas Lift	308	—16	292	....	....
TOTAL FIELD	2,898	891	3,789	....	....

* These are number of jacks connected to central powers. On December 1, 1938, there were 315 central powers installed, of which 236 were operating and 79 were idle.
† Authority: "General Conditions in the East Texas Field," by W. S. Morris, The OIL WEEKLY, May 31, 1937.
‡ Authority: National Oil Scouts' Association 1939 Yearbook.
§ Represent increases except where decreases are indicated.

water on the west side and from low pressures on the east side, but both water and low pressures ultimately will reach the average inside producer.

Every Type There

With such widely diversified conditions there is little wonder that practically every type of equipment is to be found in East Texas, from the light unit to the heavy machinery. Table 1 shows a compilation breakdown of the types of equipment installed in the field. Outstanding trends disclosed by these figures is the growth in individual pumping unit installations during 1938 and the fact that fewer of the equipped wells were idle than a year previous. The number of pumping units installed in the field increased from 1278 to 2955 during the 23 month period, and now constitute 30 percent of the wells equipped in contrast with but 21 percent on January 1, 1937. This is probably due in a large measure to the heavier intrusion of water, one of the changing conditions that will influence future pumping practices.

Pumping operations in the East Texas field up to now have simply meant the pumping edge wells. The pumping ring is gradually crowding inward at the expense of operators trapped along the danger line. A declining fluid level along the east side, and increased water production along the west side have sharply increased the average pumping time required to obtain daily allowables.

3000 Making Water

Pumping along the west side nearly always involves lifting considerable quantities of water with the oil. About 3000 pumping wells are making water, and the most serious offenders are located in this part of the field. Water production has run as high as 500 and 800 barrels daily in wells that produced only 20 barrels of oil. Steady increase in water production in such wells seldom is accompanied by an increase in oil production, a condition that has forced the installation of heavier pumping equipment at wells originally equipped to handle only a limited amount of water.

No definite water limit has been set, but it is believed that not more than 400 to 700 barrels of water can be produced economically with 20 barrels of oil. A large number of wells have been abandoned because of the high percentage of water present. Many of those wells could have been made to produce their daily allowables, but the investment would have been excessive.

Attempts to skim the oil from the water have not proved a good practice, and it is obvious that production only of oil would soon cause the increased water column to exert an excessive pressure on the producing formation and virtually kill the well. To obtain the greatest yield of oil from wells making water, it is necessary to remove the water in a direct proportion to the rate of entry with the oil.

It is impossible to predict the probable economic life of a well after it has started making water, but the experience of several operators indicates that wells will produce profitably from a few months to a few years after water encroachment. Thickness of the oil zone above the water and proximity of the "100 percent" water line along the edge of the field are factors that affect these weak producers. Many wells bottomed too deep have been improved by plugging back to avoid excessive water. Wells producing from a thin oil sand body are not easily repaired when water becomes a factor, and it is only a matter of time until the water percentage is too high for profitable operation. The cost of producing high salt water yields is excessive, and in addition the disposal problem adds materially to the cost.

Good Power Margin Desired

Pumping equipment used along the west side varies from light units and powers to heavy individual units and multiple well hook-ups. A well making only a small amount of water may be pumped successfully with almost any type of equipment, but many operators know that it is best to install equipment with a good margin of power in the beginning. Pumps, tubing, rods and service equipment have been replaced after a few months in wells that started pumping with the lightest equipment that would do the work.

Pumps used successfully are the liner, insert, ordinary cup, and composition ring types. The 2½-inch tubing strings might be

This well balanced central power is pumping 15 wells on the east side of East Texas field, an area where 16,000 wells are yet to be equipped.

classed as standard for this part of the field, the 2-inch strings having proved too small in many wells. Full ¾-inch sucker rod strings are heavy enough for most of the wells, but ⅞-inch rods have been used in a few wells. The ⅝-inch rod is too light for sustained pumping operations along the west side of the field. Tapered rod strings have not been extensively used in any part of the field. Special rods give the best service in wells producing from 100 to 300 barrels of salt water, corrosion being a factor.

The surface equipment includes central powers, small and large geared units, multiple well hookups (back-side cranks), and standard rig units. Most of the light equipment will not pump wells to depletion. The poor balance of wells against each other in small combinations has forced many operators to dismantle multiple hookups in favor of individual pumping units. Equipment capable of handling less than 200 barrels of fluid daily has been discarded for heavier equipment in many instances. Light and short-stroke equipment is gradually giving way to the single units capable of operating with longer and more positive strokes. The most satisfactory pumping units along the west side are those with a 30 to 40 horsepower rating, in use with prime movers of the same rating.

Paraffin Troublesome on East

The east side of the field is a heavily pumped strip extending along a 40-mile trend with a thin producing sand. The strip is mostly free from water, except for streaks of fresh water occasionally encountered. This part of the field has a number of pumping advantages, but it offers various problems. Paraffin causes trouble in the average well, and the fluid level is low. The accumulation of paraffin is largely confined to the top 1500 feet of hole, but its regular removal is necessary to satisfactory pumping operations in many wells. Mechanical and chemical methods are employed effectively. Failure to recognize paraffin as a production hazard has been expensive to several operators who were eventually forced to pull from 1000 to 1500 feet of tubing and remove the paraffin with heat. The low formation pressure zone has gradually extended into the field in spots along the east side. This is particularly true in the Kilgore townsite sector, where close well spacing has adversely affected a large producing area. Pumping operations and conditions along the east side closely resemble those in old settled fields, except that wells are considerably deeper than the average for old pumping fields in other districts.

Almost every type of pumping equipment is being used along the east side, and all with at least a fair measure of success. Operators are influenced by original cost, condition of the well, probable life of the well, and personal preferences when selecting pumping equipment. A number of primitive installations may be found, but the latest and most efficient pumping units are extensively used. Neat multiple well hook-ups are popular along this pumping strip, and some of the most successful are the types not adapted to the west, or water side of the field. The manufacturers of light pumping equipment have been successful in placing a large part of their output along a producing strip adapted to conservative operations.

Any pump capable of handling light crude oil may be used along the east side of the field. The 2-inch and 2½-inch sizes are used chiefly, as the fluid volume handled is not large. Many wells have been pumping continuously for more than six years. Tubing strings are 2-inch and 2½-inch sizes, but the latter should be considered standard in the better wells. The ¾-inch sucker rod strings are considered ideal for pumping these 3600-foot wells, although many ⅝-inch rod strings are being used in light wells. Several ⅞-inch rod strings have been installed in the better wells. Corrosion is not a factor in this part of the field, and standard grade rods give good service. The pumps

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● Rod breaks are only one subject of well studies by the National Sucker Rod Engineering Service. Sometimes it is a case of low volumetric efficiency. Sometimes serious rod line losses are brought to light by weighing the well at both the polish rod and the power. National rod engineers are thoroughly trained in locating hidden losses in oil lifting.

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usually are set near bottom, but there is no uniformity of fluid level from well to well.

Central Powers

Large central powers, both geared and bandwheel types, are extensively used along the east side. A typical geared central power installation includes a 100- to 130-horsepower prime mover, from which power is transmitted to the geared unit via a heavy clutch, V-belt drive from one end of the line shaft to drive shaft, and the main 4-inch drive shaft; the main geared power unit, and auxiliary equipment. Such a power delivers from 36- to 42-inch strokes, pumps up to 16 wells, and costs from $11,000 to $15,000. The average east side well on a large power requires from four to six horsepower for normal pumping operations, but location of the well, fluid level, nature of the fluid and other considerations affect requirements.

A large number of small, neat and efficient pumping units are used in and near Kilgore. The small geared unit, driven by 20 or 25 horsepower multi-cylinder gas engines or electric motors is a popular installation for light wells. Heavier units of the same type are extensively used for pumping wells with a considerable sand thickness.

The multiple well hook-up, usually a type of back-side crank, is being used to advantage where from 2 to 4 wells are involved, or where the terrain is not satisfactory for use of large powers. Some of the first installations were too light to meet requirements, but adjustments remedied the defects and most of these pumping combinations will be used for several years.

Pumping operations are negligible along the middle or "fairway" strip, a vast area that accounts for most of the flowing producers in the field. The side flanking the east side simply will become part of the east side as the pressure decline spreads and takes its toll of flowing wells. The fringe flanking the west side will take on the appearance of the true west side as water spreads deeper into the field. Monthly developments will gradually reduce the width of the great middle area, and eventually the flowing wells will be confined to a narrow strip showing the greatest sand thickness.

A mixture of the equipment used along the east and west sides of the field will be used for pumping the middle area of the field. Enough is known to indicate an easy pumping condition at first, but in the end oil will be recovered with a greater effort, just as has been the case along the east and west sides.

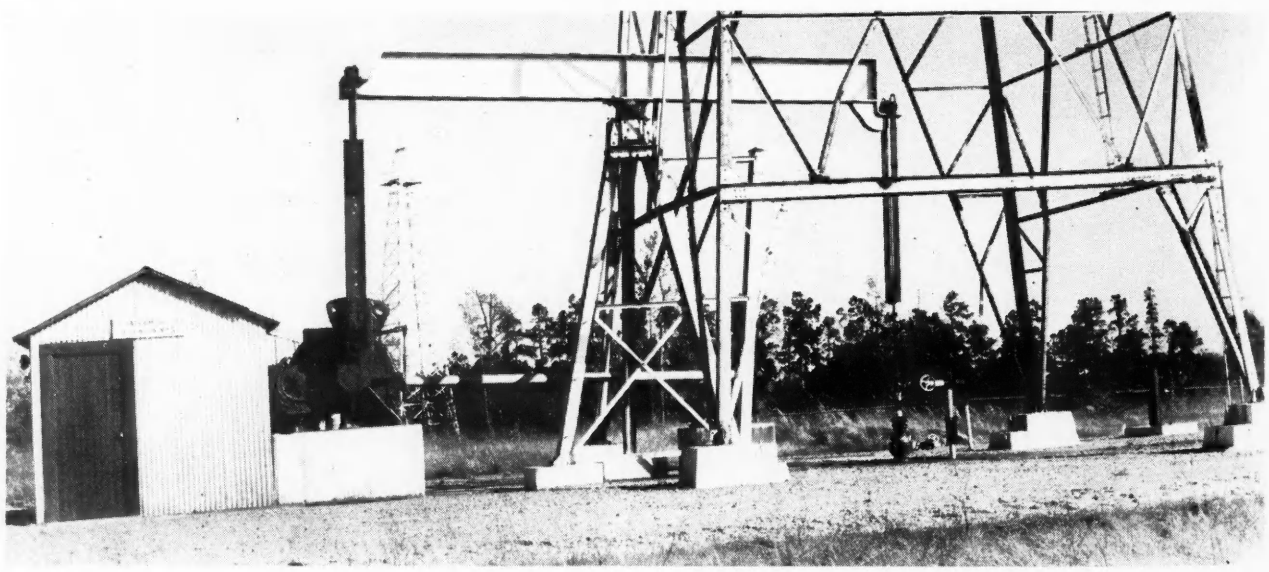
"Fairway" Installations

A typical pumping installation for the middle area will include a 2-inch or 2½-inch pump, 2½-inch tubing, ¾-inch sucker rods, 30-horsepower prime mover, 30-horsepower geared unit or its equivalent, and simple surface accessories. Central powers and multiple well hook-ups will be widely used.

Fluid level is an important consideration, but no uniformity exists. The average fluid level for the field is about 100 feet for each 34 pounds of bottom hole pressure. In the low pressure areas showing bottom-hole pressures as low as 800 pounds, the fluid level stands at a much lower level than the average. Porosity and permeability of local sectors affect the entry of oil into the hole.

Most of the pumping wells in the field are equipped for servicing with portable pulling units. Permanent derricks stand over both pumping and flowing wells.

Probable future water, paraffin and fluid level conditions, and amortization rates on pumping equipment investments are the primary factors East Texas operators should consider today in selecting lifting machinery for any site in the field.



One of the several types of individual pumping units currently in operation in East Texas field, selection of pumping equipment for which constitutes one of the major problems of the operator there as the day of non-flowing production for the field as a whole draws nearer.

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Left: An International Power Unit pumping two wells near Gladwin, Mich. Dependable, low-cost operation, and real service backing, make International Engines the outstanding favorites for powering lift pumps.

Above: When this picture was taken in the Loudon field, this International Power Unit, operating on butane, was on its twenty-fourth well in Illinois. It is owned by the Warren-Bradshaw Drilling Co., Tulsa.

Below: A major company depends on International Power to operate this well-reconditioning equipment at Lake Charles, La.

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Sampling Petroleum Hydrocarbons

By R. L. HUNTINGTON,
School of Chemical Engineering, University of Oklahoma

PART 2
Gases, Vapors and Liquids Under High Pressure

THE chief difficulty encountered in sampling petroleum hydrocarbons under pressure from pipe lines lies in the fact that one cannot ascertain readily the physical state of the flow stream. If the material is without a doubt either all gas or all liquid, sampling from a pipe line is comparatively simple.

Gas Sampling

The gas sample can be collected under full line pressure in a steel bomb should the accurate analysis of sulphur compounds not be desired, otherwise the gas can be expanded to atmospheric pressure into a glass bottle. This expansion of the gas from high pressure (800 pounds and greater) to atmospheric is not feasible however, since the expansion range might be through the retrograde region. In such an event the partial condensation of liquid in the sample container might take place with the reduction in pressure thereby causing a change in composition of the vapor. If the expansion took place directly into the sample bottle, the condensate so formed would have to be revaporized by heating the glass container before the sample is transferred into the fractionating apparatus.

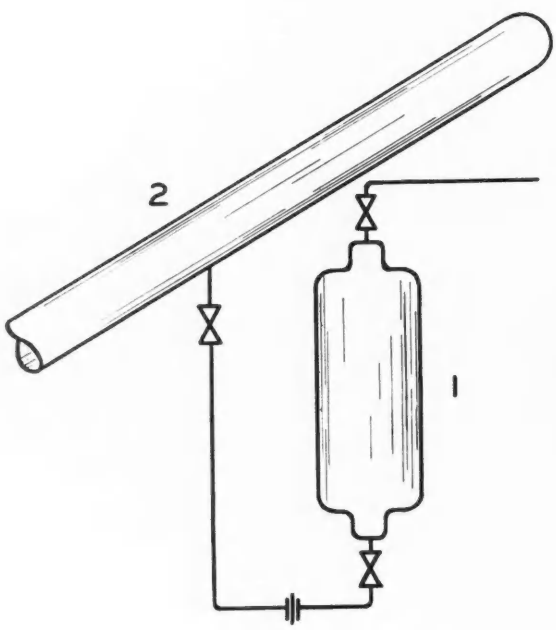

FIGURE 4
Sampling of volatile liquids under pressure.

1—High pressure bomb.

2—Liquid filled line.

Liquid Sampling

Should the pipe contain a volatile liquid only, the sample contained may be connected to the lower side of the line (Figure 4) and the liquid purged through the steel bomb slowly under full line pressure for 5 or 10 minutes. The valves on both ends of the bomb should then be closed. If the sample container is to be shipped a distance to a laboratory fractionating column at once, some vapor space must be provided in the bomb otherwise a slight increase in temperature might cause rupture of the safety disc and the loss of the contents. This outage can be provided by standing the bomb upright and removing a small fraction of the liquid through the lower valve. This procedure is a rather crude makeshift since the reduction in pressure in the bomb will cause the remaining liquid to change in composition due to its vaporization in filling the void in the top of the bomb created by the liquid removal.

Mercury as a Displacement Medium

Outage can be provided for the liquid sample without changing its original composition by first filling the bomb with mercury, displacing about 75 percent of the mercury

FAILING'S FAMOUS DRILLING RIGS *Use Bantam Bearings* FROM TOP TO BOTTOM

A STELLAR attraction at Houston's recent Oil World Exposition was the Failing 4,000 ft. Portable Slim Hole Drilling Rig shown here. Crowds watched the impressive demonstrations and oil men praised the "clock work precision", "perfect coordination" and smooth, speedy performance of the equipment.

BANTAM takes pride in pointing out that these fine Drilling Rigs use Bantam Bearings from top to bottom, at all points where friction problems are toughest. Note arrows at right. More and more machinery manufacturers specializing in oil field equipment are standardizing on Bantam Bearings to insure maximum dependability.

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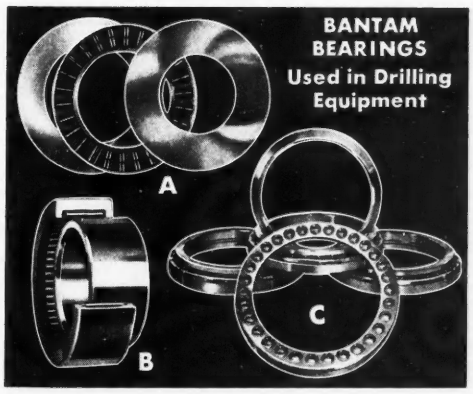

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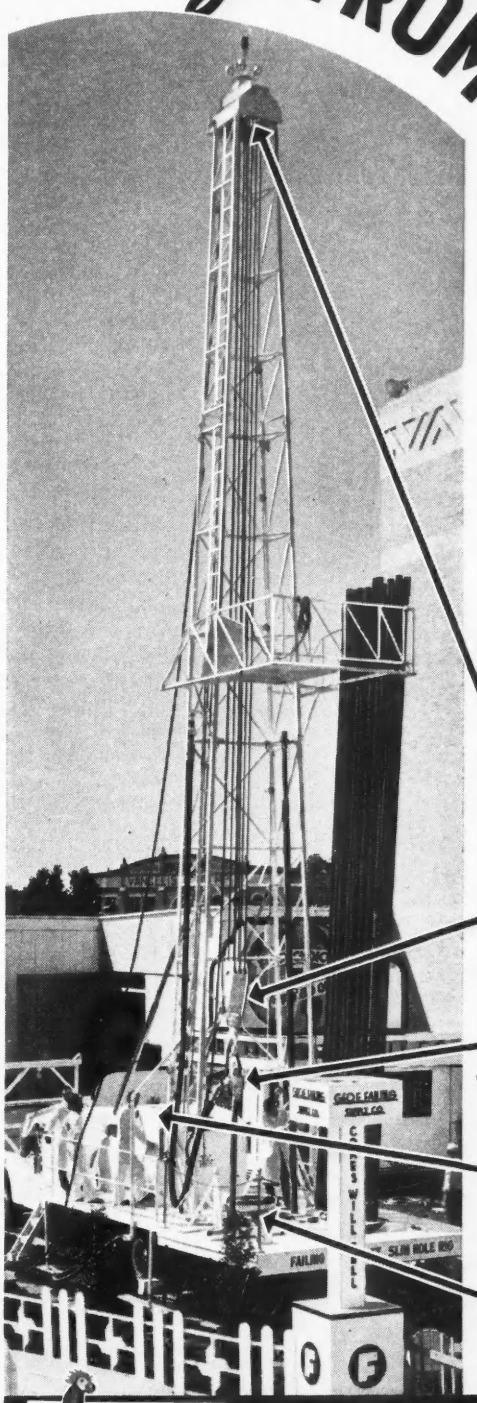
B Bantam New-Type Quill Bearing. Compact. High load capacity. Widely used for crown and traveling blocks.

C Bantam — Angular Contact Ball Bearings — standard equipment on many of the finest high speed rotary tables.



1. Bantam Quill Bearings are used in FAILING crown blocks.
2. Bantam Quill Bearings are used in FAILING traveling blocks.
3. Bantam Straight Roller Thrust Bearing is used in the FAILING swivel.
4. Bantam Quill Bearing is used in the FAILING draw works idler.
5. Bantam Angular Contact Ball Bearing is used in the FAILING rotary table.

TAPERED ROLLER—STRAIGHT ROLLER—BALL

BANTAM

BEARINGS

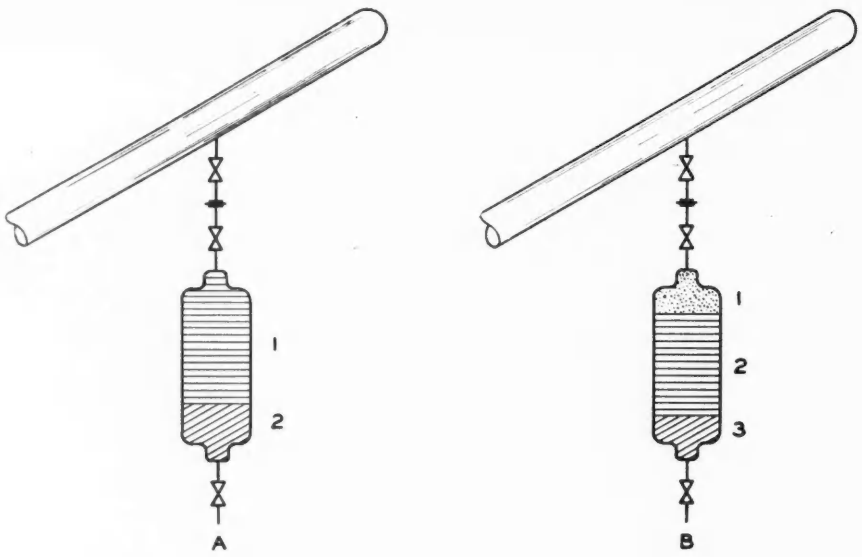


FIGURE 5

Displacement of mercury in sampling of liquids.

A (First Step):
1—Volatile liquid.
2—Mercury.

B (Ready for Shipment):
1—Vapor space.
2—Liquid.
3—Mercury.

with the sample and finally draining out most of the remaining mercury so as to provide safety in transportation (Figure 5). The temperature and pressure of the sample container are then recorded so that upon receipt at the laboratory the bomb should show the same pressure under the same temperature when brought to equilibrium conditions by agitation. In order to bring the liquid back to the same composition as that removed from the pipe line, mercury is again pumped into the bomb until the original line pressure is reached. Vigorous agitation must be provided so as to cause the vapor in the top of the bomb to redissolve into the liquid again. The liquid sample is then transferred at constant pressure from the bomb at the same time the mercury is being pumped into the lower part of the container.

Vapor-Liquid Mixtures

Whenever a sample taken from the top of a line has a different composition than one obtained from the bottom, it is evident that vapor and liquid phases are present. To obtain a representative sample of a vapor-liquid mixture from a pipe involves a problem for which a satisfactory solution has not been offered. If the mixture is flowing through the pipe as a homogeneous froth or mist with no appreciable amount of liquid adhering to the inside walls of the pipe, a representative sample can be readily taken. Since such a high degree of uniformity cannot be assured in a pipe line, the only alternative is that of flowing the mixture through a separator from which the vapor and liquid streams must be metered quantitatively and samples taken from each single phase stream. The importance of this sampling is perhaps realized most fully by designers of pipe stills for distillation, cracking and polymerization units. Were it possible to obtain samples representative of the fluid or fluid mixture at various points in the pipe still, the overall density as well as the molal analysis of the stream could be determined. These data would thereby enable the refiner to calculate not only the length of time the charge had been in the coil but also the degree of pyrolysis which had occurred up to that point.

Equilibrium Vapor-Liquid Analyses

On many occasions the quantities of each constituent present in a two phase stream are not required, however the equilibrium phase relationship may be desired.

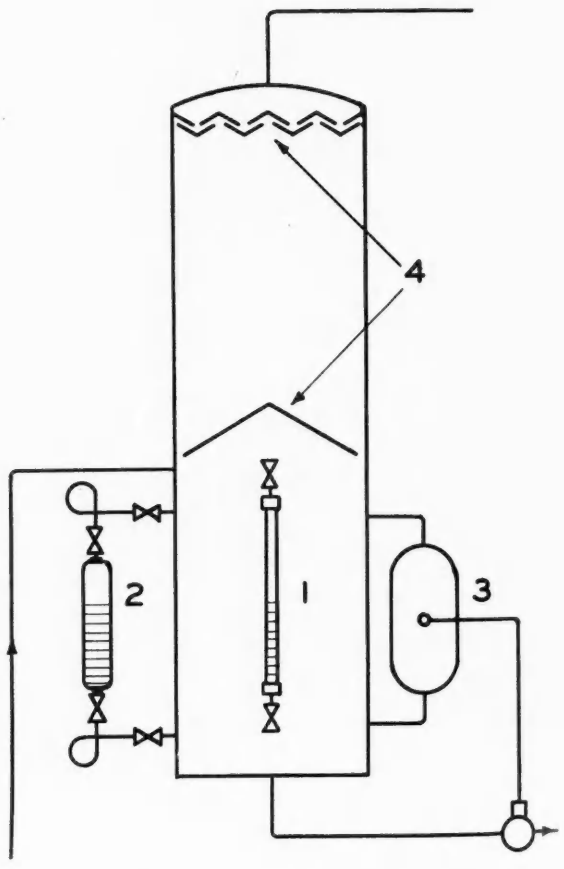
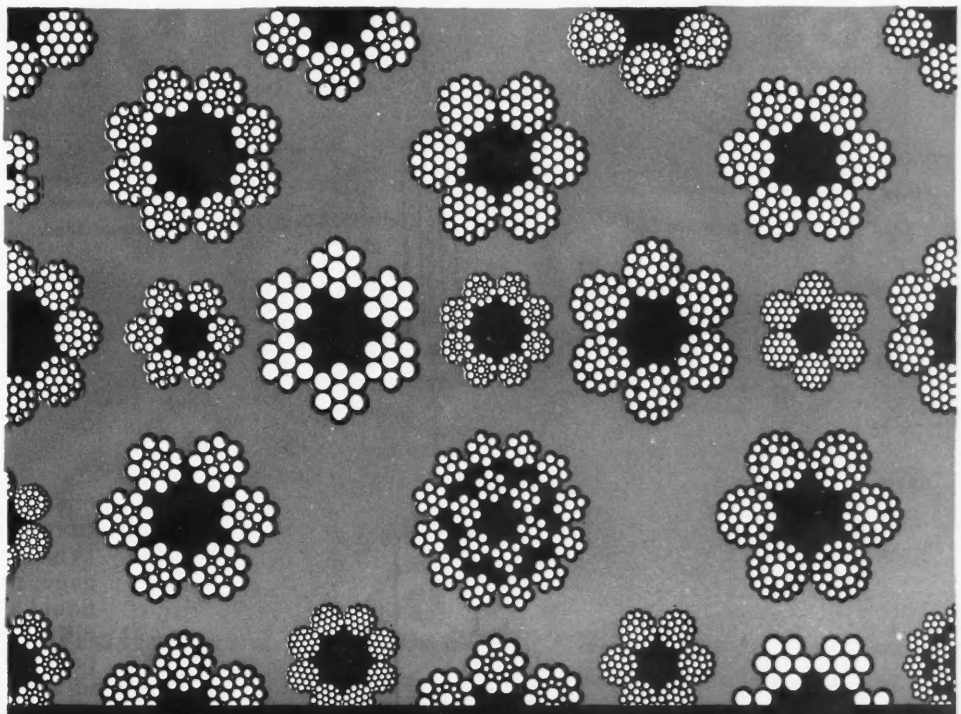


FIGURE 6

Sampling of vapor and liquid phases in one container.

1—Jerguson gage.
2—Sample bomb.
3—Kidney float.
4—Baffle and mist extractor.



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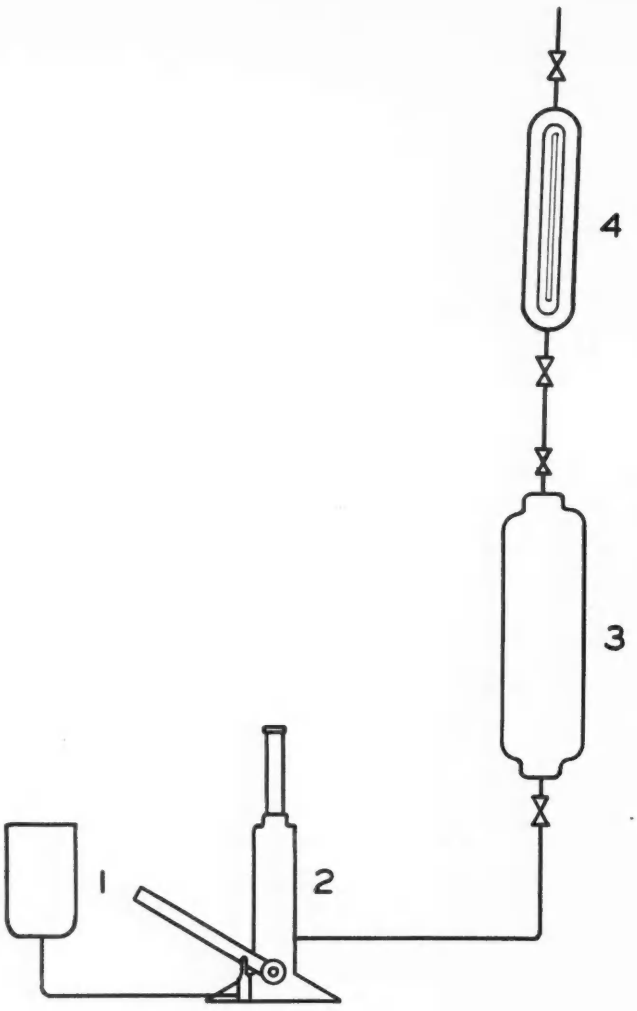


FIGURE 7

Displacement of two phase sample in laboratory with hydraulic jack.

1—Mercury supply.
2—Hydraulic jack.
3—High pressure sample.
4—Jerguson gage.

If the pressure and temperature are changing rapidly in a pipe line, a two phase sample from the line will not be representative of equilibrium conditions as either vaporization or condensation may be taking place—an indication of an unbalanced state. In a separator the time element permits an approach toward equilibrium flash vaporization conditions, therefore samples of the vapor and liquid should be fairly representative ones if taken from the overhead and bottoms respectively.

If there are an insufficient number of containers in the field for securing separate samples of vapor and liquid, an equilibrium vapor-liquid sample may be secured by mounting the bomb alongside the separator near the liquid-vapor interface level. By referring to Figure 6 it is seen how flexible high pressure tubing can be used in obtaining the relative quantities of liquid and vapor desired for the analyses. This two phase sample must be handled somewhat differently in the laboratory than either the all gaseous or all liquefied samples.

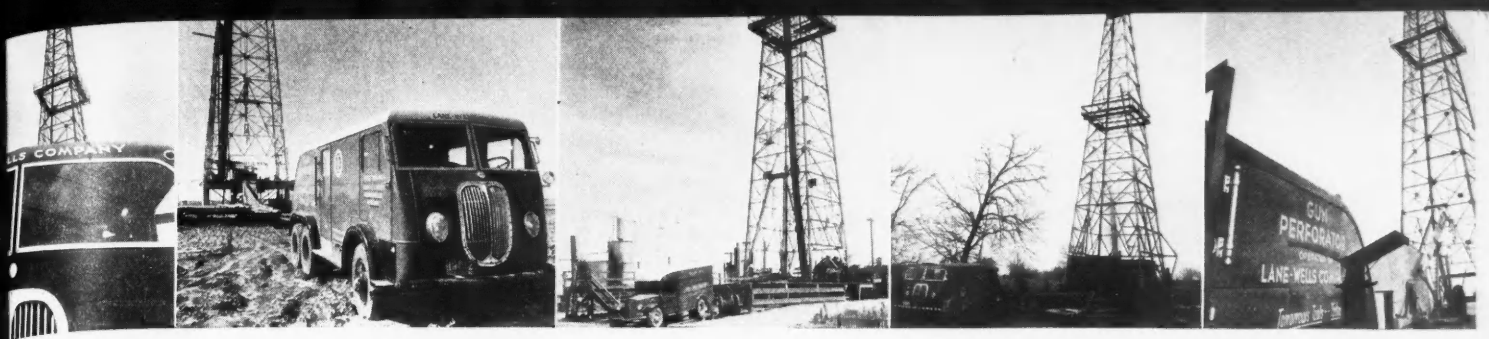
Transfer of Vapor-Liquid Sample Into Laboratory Apparatus

Many laboratories make the mistake of removing the liquid from the bottom of the container thereby upsetting equilibrium conditions between vapor and liquid. Withdrawal of the gas sample from the upper end of the container without simultaneous injection of mercury or water into the bottom of the bomb will cause an even greater departure from the equilibrium state due to the greater reduction in pressure.

Two methods of removal of the vapor and the liquid without upsetting equilibrium within the samples have been suggested. Figure 7 shows an arrangement whereby a maximum amount of vapor can be removed without contamination resulting from liquid overflow into the fractionating column. A Jerguson gage is filled with glass wool so as to minimize entrainment of mist or froth which might result from too rapid a withdrawal rate. When the liquid level reaches the gage, a meniscus will appear, the liquid appearing to be black due to diffraction of light through the prismatic glass front. The injection of the immiscible liquid into the bottom of the bomb for pressure maintenance can then be discontinued. Assurance of equilibrium between vapor and liquid can be had by vigorous agitation before the vapor is removed and preferably during the period of withdrawal. The equilibrium conditions can be maintained by rocking the container back and forth while removing the sample, although intimate mixing by vigorous shaking before releasing the vapor will suffice since the rate of diffusion of gas into quiescent liquid[2] and stratification tendencies[3] are extremely slow.

In the event that no hydraulic pump were available for forcing in an immiscible liquid for pressure maintenance, another method has been suggested by Harbert[1], which is rather unique. By referring to Figure 8 it is easily seen that the transfer of mercury into the lower portion of the sample container can be accomplished through the action of gravity. The Jerguson gage serves as a safeguard against the carry over of liquid into the vapor sample, since the lower transfer valve can be closed at any time thereby shutting off the flow of mercury. This method is so simple and fool-proof, there is no reason why it should not be used although a pump might be available.

The use of a hydraulic pump is required however when it comes to the removal of a representative portion of the liquid. Following the withdrawal of the major portion of the vapor as outlined above,



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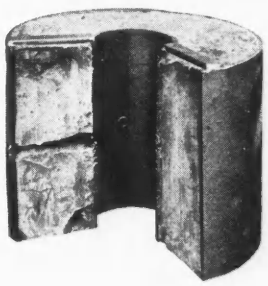
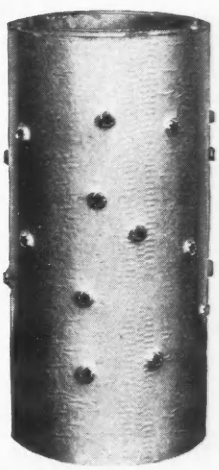


5 9/16" of steel and cement in this perforated section of casings. 5½"-17# cemented inside 16"-55#. The bullet from the 4 7/16" O.D. gun penetrated easily and buried itself deep in the test pit.



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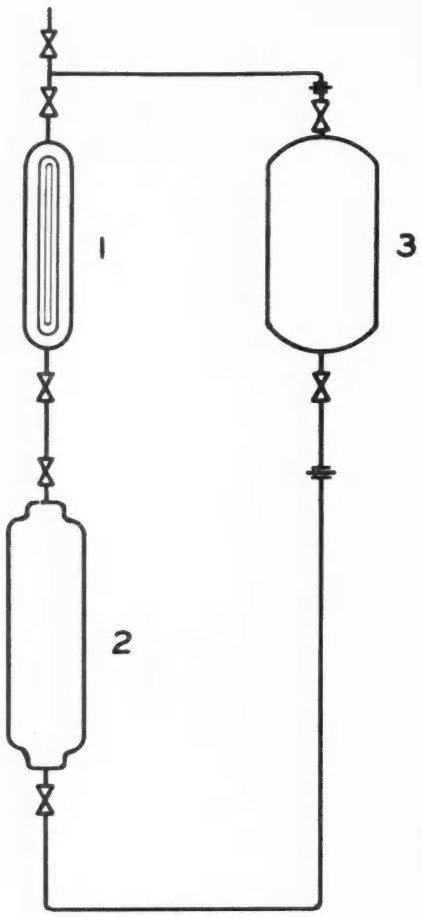

FIGURE 8

Displacement of vapor from a two phase sample without a hydraulic jack.

1—Jerguson gage.
2—High pressure two phase sample.
3—First filled with mercury and afterwards with gas.

the liquid level is raised until all of the vapor has been forced out of the Jerguson gage. By continuing the maintenance of pressure, the liquid portion of the sample can be forced into the laboratory fractionating column.

Proper Design for Metal Sample Containers

Various types of cylinders have been improvised for the transportation of hydrocarbon gases and liquids from the field to the laboratory. The allowable pressure for a bomb can be calculated from,

$$\frac{S}{P} = \frac{R}{1 - R},$$

the formula for the case of thin walled vessels and Clavarins

$$\frac{S}{P} = \frac{1.3 + 0.4\,R^2}{1 - R^2}$$

for cylinders with closed ends that are integral with the walls, where

S=Allowable fiber stress lb. per sq. in.
P=Internal pressure, lb. per sq. in.
R=r_i/r_o=ratio of inner radius to outer radius.

Whenever the valves are not protected by screw cover caps, it is necessary to pack the sample container in a strong wooden box for safe shipment. In Figure 9 is shown a type of container which is most suitable for transportation since no wooden crate is required. If this oxygen type cylinder is used, it is well to see that adapters are available for making connections to standard one eighth or one quarter inch pipe size.

Conclusions

In these two papers on the sampling of petroleum hydrocarbons the following points have been emphasized.

(1) Although written instructions are helpful, it is better to have a well trained engineer obtain the samples in the field in view of the many unforeseen contingencies which may arise.

(2) All safety codes should be observed to the letter such as provision for expansion, the release of excessive pressure automatically in the case of fire, etc.

(3) Upon receipt in the laboratory, a check-up for the presence of leakage should be made promptly.

(4) The transfer of the sample into the laboratory apparatus is to be carried out in such a way that there is no change in composition of the vapor or the liquid during the process of removal.

Acknowledgment

The author wishes to express his appreciation for the suggestions which were offered by graduate chemical engineering students in Advanced Distillation during a discussion of these sampling problems in the classroom and laboratories. The Jerguson Gage and Valve Company, Summerville, Mass., expressed their interest in the problem of sampling high pressure gases by donating a special gage to the University of Oklahoma.

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[1] Harbert, Wm. D., Personal Communication in Classroom.
[2] Lacey, Wm. N. et al, Ind. Eng. Chem. 26, 1327, 1934.
[3] Lacey, Wm. N. et al, A.P.I. Annual Meeting, Chicago, Ill. Nov. 1938.
[4] Perry, John H., Chemical Engineers Handbook, Pg. 1783. McGraw-Hill Book Company, 1934.

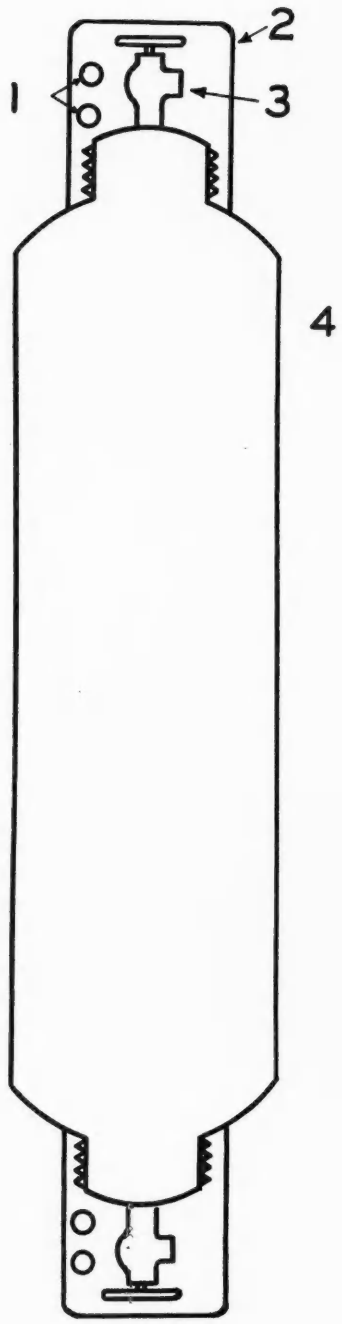
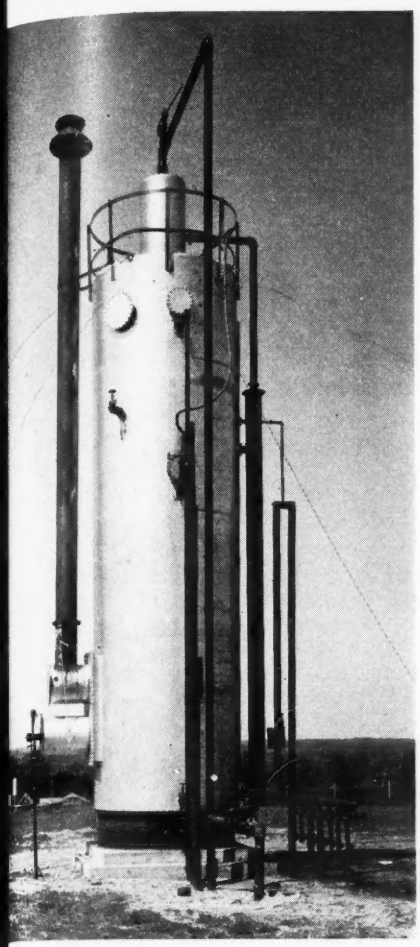


FIGURE 9

A model high pressure sampling bomb.

1—Vent holes in cap.
2—Screw cap.
3—Steel needle valve.



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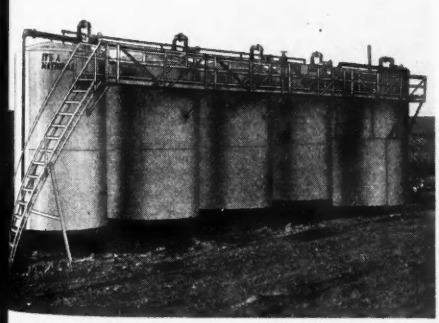

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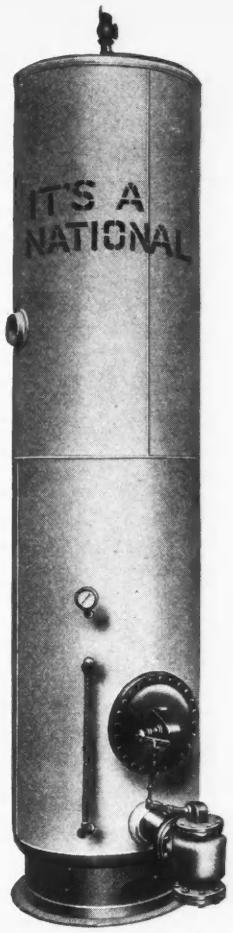

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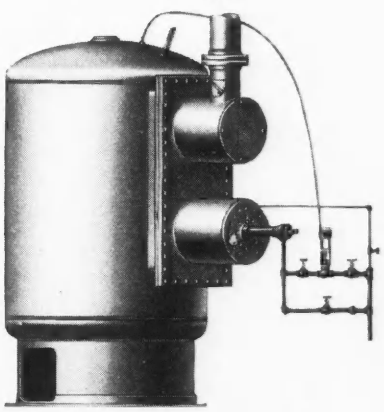

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1939 COMPOSITE CATALOG

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Good Housekeeping As a Safety Topic

By WILLIAM R. PAUL

FOR the small operator who has no safety department to help him reduce his accident frequency, the topic of good housekeeping is probably the one he can handle easiest and at the same time get the quickest and most noticeable results. Whether he is working with his foremen or with his men direct, depending upon the extent of his operations, this subject can be presented with little preparation and practically no expense.

Perhaps the first appeal to personnel on this question can be made in introductory remarks, prior to open discussion, by reminding the men that they all like to go home to clean, neat homes when they get off from work. This is because a man can relax better in orderly surroundings, and his tired mind and body are not taxed with having to cope with chaos after a day on the job. If this is true at home, then it is more true on the job, where a workman spends most of his time when not sleeping.

A second important point to bring out, and which is neglected only too much in industry, is the fact that each individual workman can prosper only to the extent that his employer prospers. Since this is true, it is desirable that the employee do everything he can to aid and help his employer reduce overhead, reduce accident costs, increase production, and increase sales where possible. One of the ways in which this can be done is to keep properties orderly and neat, and since, figuratively speaking, the employee has a part in the business in which he is employed, he should be as interested in keeping properties clean as he is his own home.

Coming further along this line of thought, the discussion can be opened by making a list of all the hazards that result from poor housekeeping. By listing the various replies from the group on the blackboard (or sheets of newsprint hung so each one can be turned back as it is filled), one will get a surprising number of replies. After all the hazards are listed, it is a simple matter to call on the group for a remedy or method of avoiding each one, with full discussion. It might be added here that no definite limit should be set on the time the meeting is to be held, since any successful meeting is held only so long as the interest of the group in question is maintained. Better to hold one for 20 minutes and have it snappy and to the point than run for two hours, with the men restlessly edging around in their seats for the last hour. Remember the men are accustomed to action in their work, and a meeting is hard for them to stand unless it has plenty of pep.

Hazards which should not be overlooked in a meeting of this kind are: loose boards with possible upturned nails, spilled oil around the engine, scattered waste and rags, loose junk which should be placed in one junk pile, carelessly thrown tools, neglected dikes around salt water and waste oil ponds, leaking stuffing boxes, cellars which should be filled or kept pumped out when the well is on production, washouts on lease roads which can wreck company mobile equipment, and dirty tools and equipment which hide dangerous defects or breaks from the eye of the workman whose very life may depend on their holding. Many more can undoubtedly be developed and discussed.

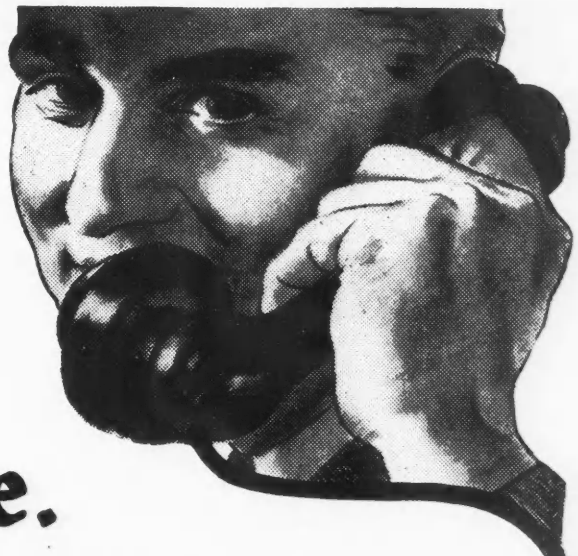
It would be well to develop instances where some workmen have been injured through lack of good housekeeping. Careful discussion and questioning will bring out some facts that will surprise many of the most careful operators about their leases. If the meeting is being held with pumpers and roustabouts present, a very lively time can be had by listing some of the things each can do to cooperate and not put all the work or blame on the other fellow if a particularly bad eyesore develops.

Some desirable points of good housekeeping not directly related to safety are repaired water leaks, orderly dog houses and oil houses, grass and weeds that are mowed or goosed, surface rod lines that are aligned and in shape and clean tank batteries.

After all the points of poor housekeeping have been covered and the remedies listed for each one, the leader should by all means list some of the advantages of good housekeeping to the workman. These would include fewer nails in feet, fewer falls on spilled oil, less danger of fire from an accumulation of rags and waste, and tools clean enough to show the least sign of defect or break. The workman profits by losing less time through accidents, thus maintaining a higher annual income for himself and family, not to mention his chance to avoid permanent injury or possible death.

The operator reduces his accident frequency and insurance rate, obtains a better satisfied personnel, fosters a more friendly public opinion, and promotes a pride of workmanship among his employees.

For the operator who cannot hold meetings very well due to scattered operations, a small bulletin board should be placed on each lease or toolhouse, and appropriate posters placed to illustrate the lesson. Or better still, if he has a mimeograph machine, he can send out a full discussion of the topic to each employee, adding some facts about the company and as many of the employees as possible. A small mimeographed sheet, newsy and to the point will also work wonders with promoting good will within the company as well as serving as a safety propaganda agent. Too much advertising should be omitted, even if the company is in the marketing field.



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WORLD DEVELOPMENT and TECHNOLOGY

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Venezuela Growing

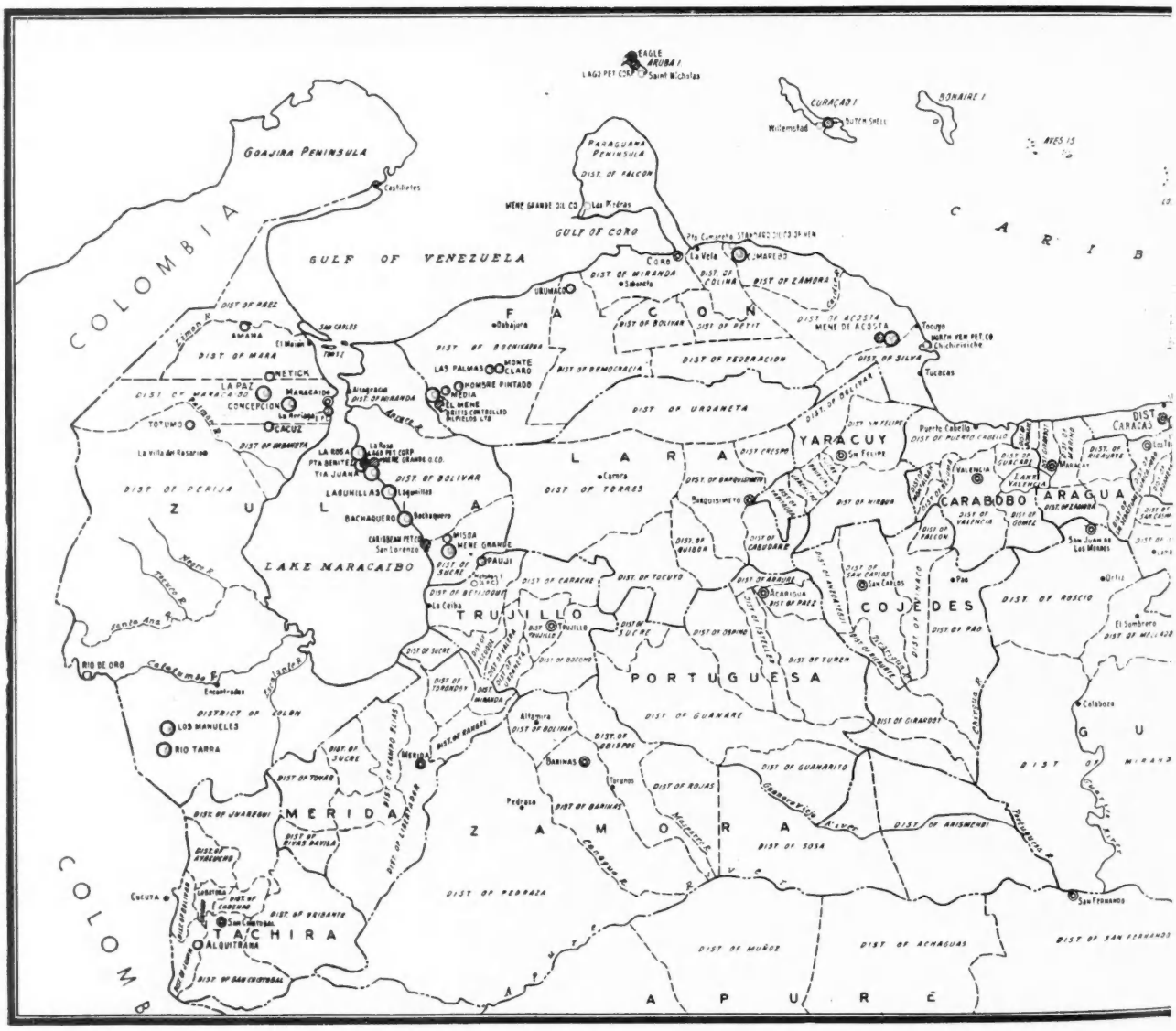
Country crowds Russia for second rank as producer. Indications are 1939 output to exceed that of 1938.

Venezuela is crowding Russia for second rank among oil producing areas of the world, the all-time peak recovery of 17,635,000 barrels in May having brought the country's total for the first five months of the year up to 80,844,000 barrels as against 72,713,000 barrels during the corresponding period of 1938.

The month closed with 26 drilling strings in operation in proven areas and a record of 21 completions in fields which are shipping crude to world markets.

All-Time Peak

While Venezuela's May production was 11 percent above that of May, 1938, it surpassed the previous all-time peak of 17,499,000 barrels established in October, 1937, by 136,000 barrels and was



835,000 barrels in excess of the figure established this year. Indications are that the 1938 total recovery of 173,506,497 barrels in Venezuela will be less than will be recovered this year if the first five months can be used as a yardstick.

Figures on production of the eight leading Venezuelan companies, as furnished by O'Shaughnessy's Oil Bulletin (figures in barrels) follow in the accompanying table.

Totals from the foregoing table indicate a daily average production of 569,000 barrels for May of this year as against 512,000 for that month in 1938. The daily average recovery taken over the five months for both years shows 535,000 barrels for this year as against 482,000 for last year.

Production of Leading Venezuelan Companies

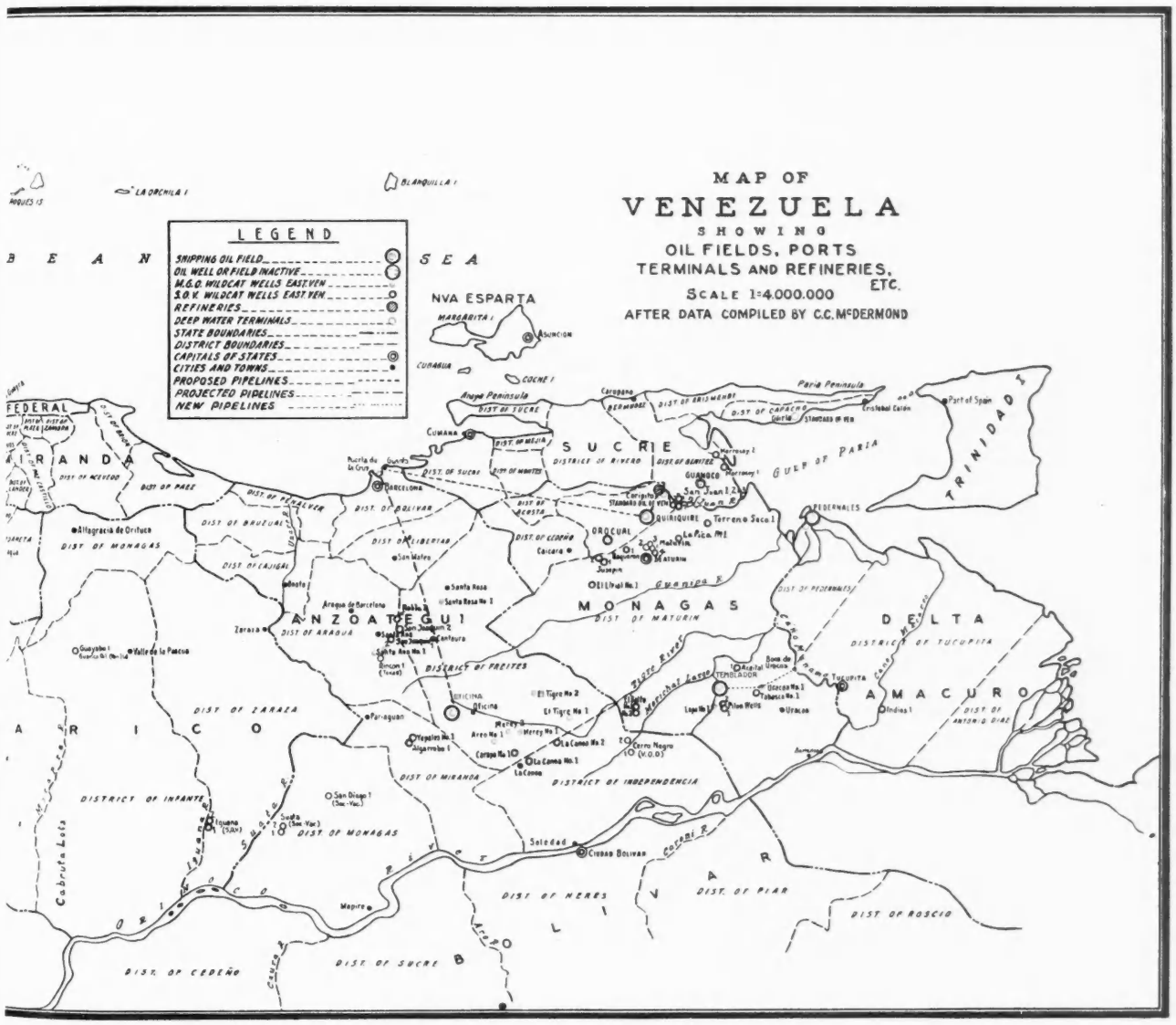
	MAY		FIVE MONTHS	
	1939	1938	1939	1938
Company:				
Venezuelan Oil Concessions	5,299,000	4,765,000	24,188,000	20,842,000
Lago Petroleum Corporation	5,735,000	4,433,000	25,108,000	20,751,000
Mene Grande Oil Company	2,030,000	2,185,000	9,788,000	9,242,000
Caribbean Petroleum	912,000	844,000	4,418,000	4,890,000
Creole Petroleum Corporation	2,960,000	3,115,000	14,373,000	14,438,000
Colon Development Corporation	547,000	411,000	2,350,000	1,952,000
British Controlled Oil Fields	88,000	57,000	316,000	309,000
North Venezuela Petroleum Company	64,000	60,000	303,000	289,000

Two Largest Producers

Venezuela's two greatest producing companies, Lago Petroleum Corporation, an affiliate of Standard Oil Company of New Jersey, and Venezuelan Oil Concessions, an interest of the Royal Dutch-Shell Group, showed substantial production increases in May as a result of increased output from their leases in the Bolivar district of Lake Maracaibo, one of the greatest crude reserve areas in the world.

Although conclusion of the first five months of the year left Venezuela some 8,000,000 barrels behind Soviet Russia in the matter of oil recovered, plans outlined earlier in the year indicate the South American republic will be far from dull during the remainder of the 12 months. For example, Lago Petroleum Corporation contemplates drilling about 30 wells at Tia Juana and Lagunillas fields in Lake Maracaibo. Other Bolivar district plans of the organization include 17 exploitation wells at Punta Benitez and 2 step-outs at Icotea. It is not likely the organization will curtail any drilling in light-oil areas as there is a shortage of this product in Venezuela.

From one of the reports of C. C. McDermond of Maracaibo, it is gathered that the uncompleted program of Shell interests in the country leaves plenty to be accomplished during the remainder of the year. Shell companies in Venezuela consist of four organizations: Venezuelan Oil Concessions,



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3-39

Caribbean Petroleum Company, Colon Development Company and Venezuelan Oil Development Company. They planned to keep 19 rigs in operation the first half of the year, an indication of what may be expected of them during the last half of this year. While most of the drilling of these organizations will be done in the vicinity of Lake Maracaibo, which still continues to be the East Texas of Venezuela, Shell interests have definite plans for holdings in the eastern section of the nation, which is generally conceded to have great reserve possibilities. These companies produced 11,309,633 metric tons in 1938 as against 10,280,903 in 1937. It is expected that 1939 production will at least equal, if not surpass, that of 1938. As a matter of fact, in the first five months of the year the four companies had already recovered 31,256,000 barrels as against 27,973,000 barrels in the corresponding period of 1938.

As an indication of what Shell expects to do during the remainder of 1939 and 1940 in Venezuela, capacity of San Lorenzo refinery, on Lake Maracaibo, was doubled during 1939. This no doubt was a move made in anticipation of increased production from the new Bachaquero field, said in some quarters to be another Lagunillas, which is the greatest individual field in Venezuela. Six strings of tools will be kept busy by Venezuelan Oil Concessions, according to Sir Andrew Agnew, chairman of the board.

Pumping Purchases

Pumping equipment purchases by the latter organization, which were rather heavy in 1938 with an aggregate expenditure of £250,000 on 182 wells (this figures out about $6865 per well) may be expected to continue in 1939 and 1940, due to the nature of the producing life of wells in areas where the company is active. In this connection, Sir Andrew says the number of pumping wells may be expected to increase from year to year.

World market conditions will force Shell interests to continue wildcatting in Venezuela, for most of their production is relatively heavy, and light oil is much in demand in Venezuela. This is why it has entered eastern Venezuela through interest in Venezuelan Oil Development Company, presently engaged in exploring a concession 200 miles up the Orinoco River.

Standard Oil Company of Venezuela will keep busy also in the eastern part of the country with five strings active at Temblador, three at Quiriquire, and five on wildcats. Mene Grande Oil Company, a subsidiary of Gulf Oil Corporation, will keep seven strings busy in Oficina and two in Santa Ana; in western Venezuela the organization probably will complete about eight wells at Tia Juana and 24 at Lagunillas during the last half of the year.

In addition to the foregoing, there are a number of wildcats in eastern and western Venezuela active, to indicate a continuance of exploratory work throughout the country for some time to come. Some of them have shown commercial production possibilities, others geological features warranting additional test drilling.

Venezuelan reserves cease to be a problem to Creole

When Eugene Holman, president of Creole Petroleum Corporation, holding company for Standard Oil Company of Venezuela, currently the most active drilling organization in the eastern section of that nation, was queried at a recent stockholders meeting regarding crude oil reserves in Venezuela, he is reputed to have answered: "We have plenty of reserves to support our present market, or any increase in the market we may see in the reasonable future—in the next 5 to 10 years. Frankly, reserves have ceased to be a problem to us."

German crude production increases 31 percent

A 31 percent gain in German petroleum production during the first four months of the current year, compared to the same period last year, is reported by Consul S. A. Belovsky, Bremer. The country's output, including Austrian production, during the 1939 period totaled 1,622,062 barrels, a gain of 384,532 barrels over the 1,237,530 barrels produced in the first four months of 1938.

The increase is due in part to inclusion of production from Austrian fields in the 1939 figures and also to newly discovered fields in other parts of Germany. Production in the principal producing area in the Old Reich decreased in the four-month period, as compared with the corresponding 1938 period. In the Hannover fields, production totaled 877,793 barrels compared with 1,036,567 barrels in 1938, a drop of approximately 15 percent. These fields in April accounted for only 52 percent of the country's total production, against 82 percent in April, 1938.

Workers employed in German and Austrian oil fields at the end of April totaled 6354, a slight increase over the same day in 1938.

Rotterdam court sanctions seizure of Mexican crude

Acting on authority of the president of the Rotterdam Court of Justice, Mexican Eagle Oil Company has seized 5428 tons of gas oil shipped to Holland on SS. Sunbeam from the Houston, Texas, refinery of Eastern States Refining Company. It was alleged by Mexican Eagle that the product had been obtained from crude produced from Mexican Eagle's properties in Vera Cruz which were confiscated by the Mexican government March 18, 1938.

New oil shipping rates may block Turner Valley line

Interpreted as a move toward cooperation between Canada's two railway systems and the Alberta oil industry and as a step to forestall construction of a crude oil pipe line outlet for Turner Valley field, a schedule of "agreed charges" for transportation of petroleum products from Calgary to points in Alberta and Saskatchewan were placed before the Federal Board of Transport Commissioners for approval last week. The schedule was arranged by the railway systems and the Imperial Oil Company and McColl Frontenac Oil Company.

The rate on petroleum products, under the agreed charges, starts at 5 cents per 100 pounds for distances up to 20 miles and then advances to 46 cents for 270 miles. Beyond 270 miles, the current tariff rates would apply.

Legislation authorizing such agreed charges was approved two sessions ago by the Canadian parliament, and it became effective last October. It permits the two railways to enter into an arrangement with a producer or manufacturer whereby the latter undertakes to use the railways for the transportation of his product all the year round. As an inducement, the railways offer a rate lower than the normal rate between specified points.

Hon. T. A. Crerer, federal minister of resources, expressed an opinion at Ottawa that there will be no hurried construction of a pipe line from Turner Valley to the head of the Great Lakes. He explained that everything continues in the exploratory stage, and that it "is desired to find out the potentialities of the field."

Turner Valley pipe line and handling rates cut

In accordance with recommendations of a royal commission currently investigating the Alberta oil industry, the Alberta public utility commission last week made effective a reduction from 15 cents to 9½ cents in the pipe line transportation rate for crude from the Turner Valley field to Calgary, refinery and shipping point. The same order cut the handling charge on crude loaded into tank cars or tank trucks from 5 cents to 2½ cents a barrel.

Legislation bringing lines from the field to Calgary, owned by Royalite Oil Company, Ltd., under jurisdiction of the commission was recently approved.

Based on an average through-put of 15,000 barrels a day, the new rates represent a saving to refineries and a loss to the Royalite company of approximately $400,000 a year. The reduction was sought by Turner Valley producers, who feel it will have the same effect in expanding the market for Turner Valley crude as would a corresponding reduction in the posted price of crude.

Albania expected to show increase in production

Albania's petroleum resources are undergoing steady and progressive development under Azienda Italiana Petroli Albania, which in 1925 received a 50-year concession from the Albanian government.

A total of 380 producing wells have been drilled by Azienda Italiana Petroli Albania, with depths ranging from 1200 to 2500 feet. Production has reached the 200,000-ton figure, with an eventual annual production of 300,000 tons anticipated. The crude has a natural gasoline yield of 13 percent, with Italian authorities maintaining it can be increased to 80 percent by modern hydrogenation methods. On the basis of production during the first months, indications are that 1939 production will be well above that of 1938 and other previous years.

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MEN IN THE INDUSTRY'S NEWS

W. A. THOMAS WILL BECOME CHIEF GEOLOGIST FOR MICHIGAN DIVISION OF OHIO OIL COMPANY

»

HAS PLAYED PROMINENT PART IN DISCOVERY OF SEVERAL OIL FIELDS IN STATE

»

W. A. THOMAS

W. A. THOMAS, consulting geologist who has played part in discovery of several Michigan fields, soon will become chief geologist of the Michigan division of The Ohio Oil Company, which recently opened offices in Mount Pleasant.

Since September, 1938, when Thomas resigned as head of the land and geological departments of McClanahan Oil Company, he has been engaged in private consulting. He went to Michigan in 1926 as chief divisional geologist for The Pure Oil Company, with which organization he had been connected in eastern states and Texas. Yost field of Midland County, Sherman field of Isabella County, and West Branch field of Ogemaw County were discovered by The Pure Oil Company while Thomas headed its geological division. He is credited with a leading role in discovery also of Mount Pleasant and Clayton fields. In 1921 he served as assistant state geologist for Indiana.

S. C. McFARLANE, chief production clerk for Magnolia Petroleum Company in the Salem, Illinois, district, is spending a portion of his 3-weeks vacation visiting Dallas and other points in Texas.

A. J. VIETS, scout for Sun Oil Company in Southwest Texas, with headquarters at Beeville, has been assigned to scouting production and pipe line activities, and will make his headquarters at Corpus Christi.

GLEN A. NELLE, who recently received special training in Magnolia Petroleum Company's production engineering department, sailed from New York July 14 for Venezuela, where he will be employed by Socony-Vacuum Oil Company. He is scheduled to be assigned to drilling operations.

A. K. TYSON, with Continental Oil Company in Houston, is vacationing in San Francisco.

CHARLIE HEWITT, scout for Mid-Continent Petroleum Corporation, left a Shawnee, Oklahoma, hospital too soon, fainted upon the sidewalk, and was returned to the hospital.

GEORGE A. RAY, SR., C. H. Ray and George A. Ray, Jr. have organized Gar Oil Company as a Texas firm with headquarters at Pettus.

M. L. BENEDUM, Benedum & Trees Oil Company, observing his seventieth birthday at his home in Pittsburgh last week, predicted that a third term for President Roosevelt would not become an issue and declared that cooperation of industry, labor and government could "lick" the depression "in a hurry." In previous years a heavy contributor to campaign funds of the Democratic party, the oil man said: "The third term is not yet an issue, and I do not believe it will become one. However, I might say that I am old-fashioned enough to cling to the traditions, ideals and principles established and maintained by great Americans like George Washington, Thomas Jefferson and Andrew Jackson."

F. E. LANDRUM, R. N. Gresham and T. M. McCarthy have organized Tellmar Oil Corporation, establishing headquarters at San Antonio.

GEORGE H. NORTON, Kansas district geologist for Atlantic Refining Company, has returned to Wichita from a trip to New York.

MARTIN HEAD, operator of Texas and Mexico, has established an office in the American National Bank Building at St. Joseph, Missouri.

W. G. SKELLY, president of Skelly Oil Company, Tulsa, and Republican national committeeman for Oklahoma, and C. C. Herndon, Skelly vice president, were guests of Governor Payne Ratner of Kansas during a brief stop in Topeka last week.

RAYMOND L. TOLLETT has been named secretary-treasurer of Cosden Petroleum Corporation, succeeding J. W. Lane.

MARK STUMP, geologist with Sunray Oil Company, has returned to Tulsa from a trip through the Indiana-Illinois-Kentucky area.

G. A. HALFF, Hugh A. L. Halff and J. C. Bertrand have organized the Bluhawk Oil Company as a Texas corporation. Headquarters have been established in San Antonio.

DICK ANDRADE, Dallas operator; Dan Rogers, Dallas banker-oil man, and T. E. McArdle, Shreveport operator, have organized Mar Marketing Corporation as a pipe line firm. Headquarters is at Corpus Christi, where the group owns a refinery on the ship channel.

C. G. BEAUSOLEIL, president and managing director of Sunray Petroleum Corporation, arrived in Calgary from Montreal last week to supervise operations at the company's well in southwest Turner Valley, Alberta. He plans to open an office in the Lancaster Building.

JOHN GALLEY has been named district geologist in Kansas for Shell Oil Company. Formerly at Tulsa, Galley succeeds Les Clark, recently transferred to Centralia, Illinois.

GORDON WATSON, district land man in Kansas for Cities Service Oil Company, was ill at his home in Wichita last week.

H. W. NEWELL, a Harvard University graduate, has been appointed assistant to A. E. Oldham, chief geologist of American Liberty Oil Company, Dallas.

J. H. PRESSLEY, head of the Dallas office of Sun Oil Company, is showing improvement after a serious illness at St. Paul's hospital there.

J. O. WHITE, A. H. Hermes and C. F. Holm are principals of the Neuces Rig Builders, Incorporated, chartered as a Texas corporation last week. Headquarters are at Corpus Christi.

HOWARD P. HOLMES, president of Two-States Drilling Company, Dallas, was in Hobbs, New Mexico, the past week checking field activity in Southeastern Lea County and Texas border counties.

H. L. BRIGGS, vice president and general manager of Coline Oil Company (Santa Fe Railroad), has shifted headquarters from Oklahoma City to Amarillo, Texas. Oil Development Company of Texas, an affiliated unit that has been assigned valuable oil rights under Santa Fe Railroad fee lands in the Wasson-Bennett district, West Texas, has also established offices at Amarillo.

H. W. SANDERS has been elected treasurer of Union Oil Company, succeeding J. M. Rust, retired, according to an announcement by Reese H. Taylor, president of the company. Born in Marcy, New York, Sanders went to Los Angeles in 1909, received his preliminary education there and later studied business administration and economics at Cornell University; served as assistant to L. L. Nunn, president and general manager of a utility chain in the Rocky Mountain

The COMPOSITE CATALOG

OF OIL FIELD AND PIPE LINE EQUIPMENT

PUBLISHED BY

GULF PUBLISHING COMPANY · 3301 BUFFALO DRIVE · HOUSTON, TEXAS

AGAIN---OUR THANKS---

Because the supply stores play such an intimate part in the distribution of oil country equipment, and because the approximately 850 stores have all been provided with copies of The Composite Catalog, the publishers of The Composite Catalog addressed letters a short time ago to these stores inquiring as to the extent of their usage of The Composite Catalog.

We wish to thank the 374 supply stores who replied to our letter.

These 374 supply stores, in their replies, said that they had referred to The Composite Catalog a total of 60,315 times during the past year! Forty-four percent of all the stores addressed replied. The average usage per year was 161.2 times per store.

Applying this average to all stores, it would appear that The Composite Catalog is referred to not less than 137,000 times per year by supply stores in checking oil country equipment.

We are deeply gratified at the constant usage The Composite Catalog is receiving at the hands of oil men and supply stores and appreciate the time and attention given our letter by these supply stores.

Sincerely,

Ray L. Dudley

President, GULF PUBLISHING COMPANY
Publishers, The Composite Catalog.

H. W. SANDERS
Treasurer, Union Oil Company

district and founder of The Telluride Association; in 1916 was elected a delegate to the National Conservation Congress at Washington, D. C. He spent 18 months wtih the United States Army in France and England and became interested in the grain and livestock business in Oklahoma, upon his discharge from the service. He was president and director of Citizens State Bank of Minco, Oklahoma, before he became associated with Union Oil Company in April, 1926, and was elected an assistant treasurer in August, 1934.

A. L. ACKERS, Fort Worth division geologist for Stanolind Oil & Gas Company, will be transferred August 1 to the company's Tulsa general office to assume charge of subsurface work in the exploration department. He will be succeeded at Fort Worth by Frank H. Schouten, Midland district geologist, who in turn has been relieved by Foster Schempf, formerly of Tyler.

F. B. JACKSON, JR., Dallas oil producer, was removed to a hospital at Santa Maria, California, after being injured July 13 in an auto accident near Los Alamos that cost the life of his wife, and also injured three relatives that were passengers in the car.

CHARLES M. LANGFORD, former chief engineer and chief of production for the Texas Railroad Commission, has been employed as engineer for the League City Operators Association.

DIED:

J. M. ROSS, 48, member of the drilling firm of Brown & Ross, Incorporated, died of a heart attack in a Dallas hospital July 13. A World war veteran, during his days in the army Ross acquired three world records for track events. His brother, Norman B. Ross, is drilling an exhibition well at the New York World's Fair.

SAMUEL C. PHILIPS, 55, superintendent for the past 22 years of the transportation department of Sinclair Oil Company at Tulsa, died of a heart attack at his home July 16.

W. M. McVEY, 45, East Texas field producer and civic leader of Kilgore, died July 15 of a gunshot wound in the head. He was a vice president and one of the organizers of the East Texas Oil Association. His death occurred several hours after returning to Kilgore from Tyler, where he represented the body at a federal court hearing involving the Rowan-Nichols Oil Company's proration injunction suit.

F. C. VOGEL, 76, oil operator of Vinita, Oklahoma, died July 15 at his home after a lingering illness.

West Virginia oil and gas men to meet September 27

West Virginia Oil & Natural Gas Association will hold its annual meeting in Charleston September 27 and 28, Edwin Robinson, secretary-treasurer, announced last week. A program equal to that which attracted a record attendance at the 1938 meeting is promised for this year's gathering, Robinson said, and the date has been set later in the hope that delegates will experience more comfortable weather.

The Texas Railroad Commission will hold a hearing at Austin July 31 on application of Gray & Wolfe Company that their State-Colorado river wells in Wharton County be transferred on the commission schedules from Magnet to Withers field.

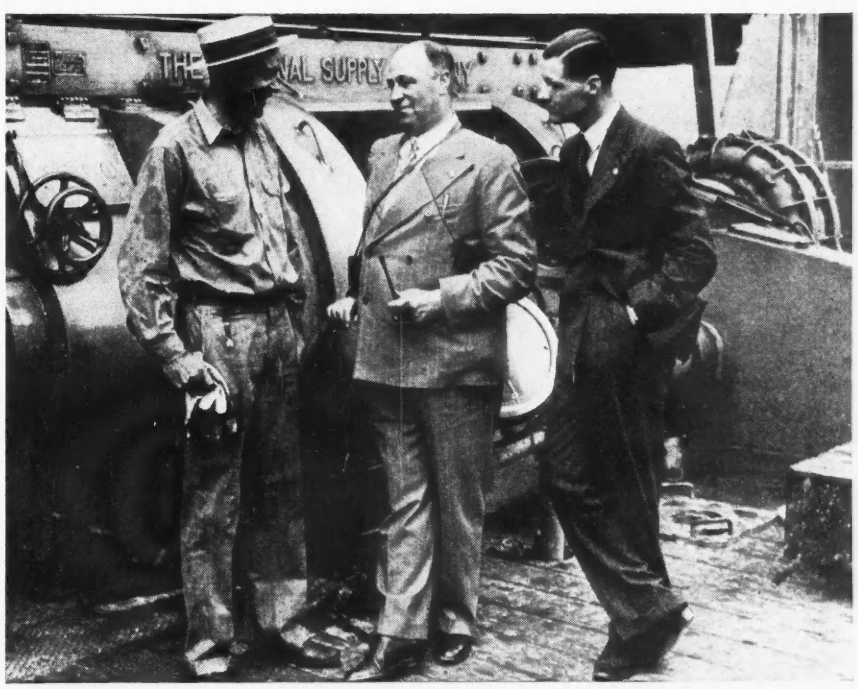
Plans completed for Appalachian meter school

H. J. Wagner, senior natural gas engineer, Public Service Commission of West Virginia, and chairman of the Meter School Committee, has announced that all is in readiness for this year's Appalachian Gas Measurement Short Course to be held at the University of West Virginia in Morgantown, August 21, 22 and 23.

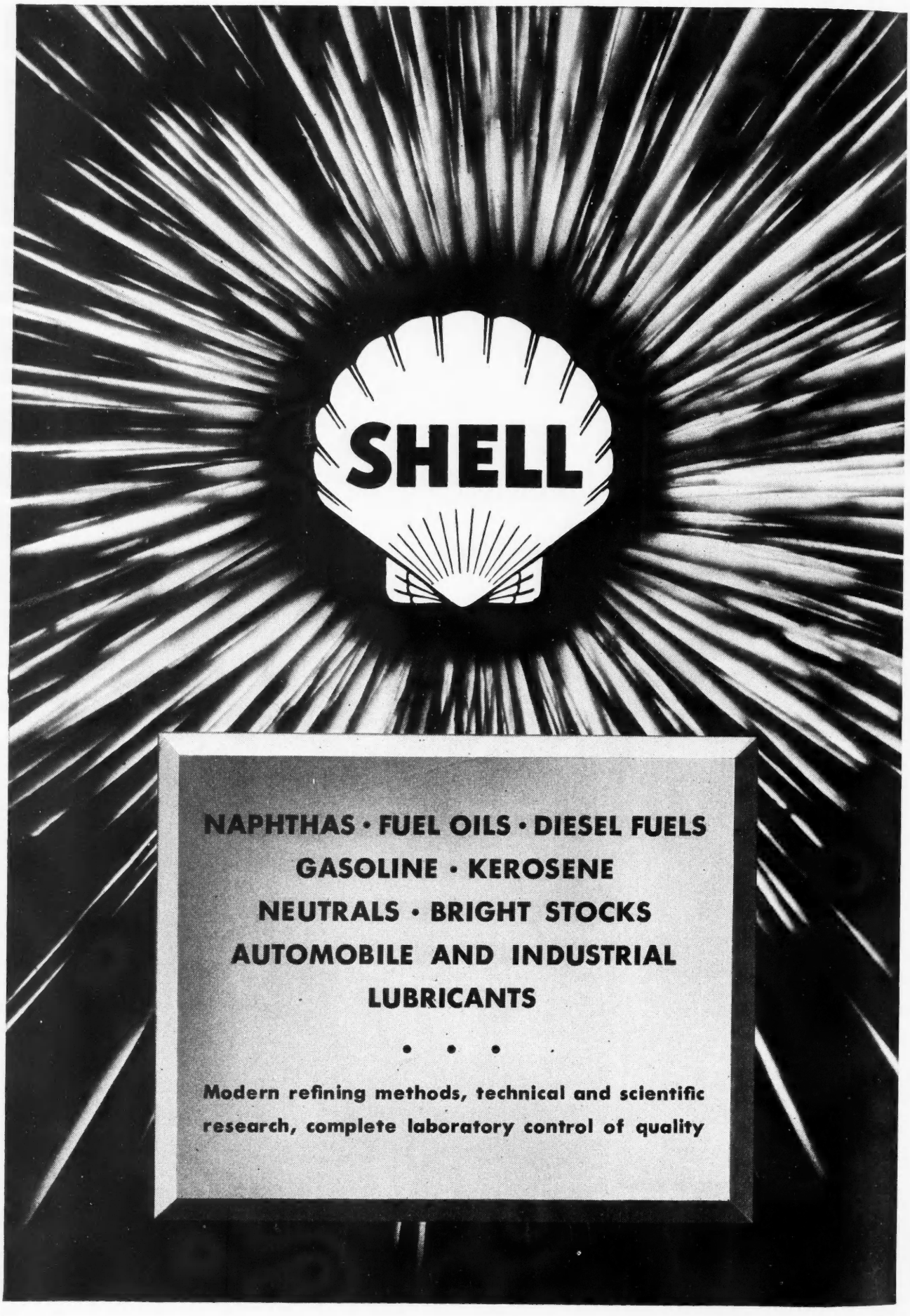
An outstanding list of speakers have been secured for the various sessions. General meetings will be held in the morning on Monday and Tuesday at which time those present will be addressed by recognized authorities on various economic phases of gas measurement and control. These speakers include Dr. C. E. Lawall, acting president of the University; W. A. Wallace, Jr., president of the Oil and Gas Association of West Virginia; George E. Welker, president, United Natural Gas Company; C. C. Phillips, superintendent of transmission, Ohio Fuel Gas Company; B. L. Maulsby, manager, Lynchburg Gas Company; A. M. Hutchinson, superintendent of gas measurement, Ohio Fuel Gas Company, and C. C. Reed, general superintendent, Hope Natural Gas Company.

Classroom sessions of one hour and fifteen minutes each, will be conducted afternoons and all day Wednesday by gas company engineers and representatives of the equipment manufacturers. A wide variety of subjects will be offered during each period from which a choice may be made. Repeat classes are scheduled to take care of conflictions in interest.

The registration fee for this school is only $3.00 which includes a ticket to the banquet, while rooms and board in the university dormitory will be available, up to its capacity, at $1.50 per day.



One of the largest distributors of gasoline in England, G. C. Wilcox, of Denham, Bucks, England, and his son, R. C. Wilcox, inspect the oil derrick at the Petroleum Exhibition at the New York World's Fair. Veteran oil men from Oklahoma and Texas gave the overseas visitors their initial experience in watching the operation of a modern oil drilling rig.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THE WEEK'S NEWS SUMMARIZED

Louisiana Again

Louisiana's internal affairs, which for years have been a source of wonder to all other people and increasingly during the last two years an annoyance to proration in the oil industry, at last have started a federal investigation which may have an echo in the passage by Congress of some kind of federal regulation of the oil industry. President last week intimated that Congress will be asked to initiate at this session, study during recess and pass next year some kind of an oil regulatory bill. Just what this bill will be like is a matter not to be guessed at this stage, except that it probably will be based upon the recommendations of the National Resources Committee which reported last January.

Those who conferred with the president as the matter was set in motion refused to divulge details, but it was intimated that the proposed legislation will be designed to prevent waste. To that end it may well include the unit development plan and other reforms adopted by Secretary Ickes for the public lands and urged by him for the whole industry.

Interstate Compact

President Roosevelt signed a congressional resolution extending the Interstate Oil Compact another two years while a meeting of that body was in session at Santa Fe, New Mexico.

The Santa Fe meeting discussed all phases of the conservation problem, stressing the futility of federal control of the oil industry and assuring each other of the ability of the oil-producing states to handle their own problems. It was stressed, however, that uniformity of conservation laws in the several states would be desirable.

A speaker for the United States Bureau of Mines indicated that the market picture is not bright, and one for the Independent Petroleum Association had a reason for it in the import situation. Gulf Oil Corporation and Standard Oil Company of New Jersey were pointed out as principal offenders on imports, and speakers for the latter denied that the company is refining too much crude or unduly increasing imports, and said that it has less gasoline in tanks than this time last year.

August Demand

The United States Bureau of Mines estimates demand for domestic crude in August by U. S. refineries will be 2,728,000 barrels daily, an increase of 8700 barrels daily over the previous month, and 18,900 barrels over actual consumption of domestic crude during the same month a year ago. Still larger increase is indicated for refinery runs, but a large part of this is expected to be imported oil. The bureau has figures on stocks to July 1, showing a loss of domestic crude storage that month of 6,137,000 barrels.

Because it expects August to be a most "unusual" month insofar as new production is concerned, the Central Committee of California Producers hiked the allowable figure for that month 3000 barrels above what it was in July. Top allowables on more than 500 wells were sliced 10 barrels to help take care of the above increase. Governor Olson had yet to sign the Atkinson Control Bill late Friday afternoon.

Statistics

A decidedly more favorable trend of the industry's statistical position was in evidence during the latest week for which figures are available, the period ended July 15, when 1,407,000 barrels of gasoline and 2,219,000 barrels of crude oil were drawn from storage.

The accelerated rate of reduction in gasoline stocks was particularly encouraging in view of the comparatively small volumes withdrawn in recent weeks, whereas larger quantities should have been taken out of storage during this season of the year.

As a result of the reductions, gasoline stocks were at the lowest level since early February this year, being estimated as totaling 79,416,000 barrels, which was less than 1 percent greater than a year ago.

Crude stocks stood at 269,348,000 barrels, or 7.1 percent lower than a year previous and the lowest level in 17 years.

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Compact Meeting

Uniformity of conservation laws is urged by Interstate Oil Compact members . . . Michigan becomes seventh member . . . Imports scored

Uniform operating practices was the principal subject for discussion at the Interstate Oil Compact Commission meeting held in Santa Fe, New Mexico, last week, and as state representatives urged that conservation statutes be made more uniform, plans were formulated for a committee to prepare rules for standard practices to be used in the drilling and operation of wells in those states which are members of the compact.

The futility of federal control and the ability of the oil-producing states to solve their own problems was emphasized by several of the speakers who could see nothing to be gained by turning the industry over to Washington bureaucrats.

Most of the prepared papers were delivered at the first day's meeting before members adjourned for private conferences. In attendance were representatives of seven oil producing states. Michigan was admitted to full membership in the compact, being the seventh state to join.

Representing the various states were: P. J. Hoffmaster, supervisor of wells for the Michigan Conservation Commission; Ernest O. Thompson, chairman of the Interstate Compact Commission and member of the Texas Railroad Commission; Governor John E. Miles, Lieutenant - Governor James Murray, and Hiram Dow, representing New Mexico; Judge Warwick Downing, representing Colorado; Governor Leon Phillips, W. J. Holloway, Charles Orr, Tom Anglin and W. J. Armstrong, representing Oklahoma; A. F. Schoeppell and Theodore Morgan, representing the Kansas Corporation Commission; and William Alberts, state land commissioner from Arizona.

A. H. Bell, state geologist for Illinois, and J. H. Alphin, Eldorado, state geologist for Arkansas, were present also.

Numerous producers and executives of oil companies likewise attended the session.

No Reason for Federal Control

"There is no reason or justification for federal control of the oil industry," declared Governor Leon Phillips in the opening address. "The oil-producing states have the inclination and the duty to do this job. There is no reason for anyone to interfere.

"We expect to be good neighbors to our sister states which also produce oil and work out our problems through the medium of the compact."

Hiram Dow, former lieutenant-governor of New Mexico, outlined the benefits which have resulted from the enactment of the conservation law in his state. He pointed out that it had been passed when the Hobbs pool came in, and had served as a model for similar statutes in other states.

New Mexico was the proving ground of the benefits of wide spacing, he said, referring to the 40-acre spacing plan and proration on the basis of oil in place, or acre-feet of producing sand. Enforced unitization prevented concentrated drilling, and the proration orders have never been attacked in the courts.

Potential No Index

He declared that excessive drilling leads to waste because of high allowables, allowables above the optimum rate of flow. Absence of the use of a potential factor avoided the fallacies of this program and its wasteful results. It was abandoned, he said, because studies of the porosity and permeability factors indicated that potential was no index to oil in place. Close spacing does not conserve energy by making it possible to move more oil to the wells, because of the waste resulting from high rates of flow, waste of both gas and pressure.

Widely spaced pools with few wells lend themselves readily to conservative operation. The field may be fully developed without an excessive allowable, pressure, gas/oil ratios, and water encroachment can be controlled; a study of operation in these pools indicates that there is far less waste than in pools where close spacing prevails. It is also possible to reduce allowables for these fields to make a place in the market for any new fields that may be discovered, he said.

"Equity," Dow declared, "must yield to waste prevention. However, pooling and unitization aid in doing equity among the producers in the field."

He declared that these policies have benefitted the state generally and have enabled New Mexico producers to compete with those better situated geographically. The state has an estimated reserve of 600,000,000 barrels and is now withdrawing at the rate of about 100,000 barrels daily. There is a reserve sufficient to supply oil for 18 years, Dow said.

Law of Capture Abandoned

Warwick Downing of Colorado, declared that the law of capture has been abandoned, never to return, and that the law of correlative rights has been substituted. He insisted that the states can handle the problem far better than any autocratic bureau in Washington.

P. J. Hoffmaster, supervisor of wells for the State Conservation Commission of Michigan, indicated he anticipated trouble in the enforcement of commission orders which became effective under a new statute on July 1. He explained that the new statute provides for an advisory council of six operators which has no authority, and that proration orders are now in effect in six of 32 fields in the state.

Allowables are fixed on a flat per-well basis, but he expects that better plans of proration will be instituted as detailed data on the various fields is accumulated. Hoffmaster declared that the commission's authority was very broad, and that he was proceeding with caution in his recommendations.

Given More Power

A new law passed in Kansas has given the Corporation Commission more power, A. F. Schoeppell said. On July 26 the commission will issue a new series of rules. He said the commission contemplated the establishment of a maximum potential of 2500 barrels daily for wells in that state, regardless of their ability to produce. Apparently this was intended to eliminate the evils which have arisen from past attempts on the part of operators to obtain the highest potentials possible for their wells.

There are eight rigs running in Arizona and five more will be in operation soon, William Alberts, Arizona state land commissioner, said. The prospect near Buckeye is the most promising, he said, and a recent electrical test showed 310 feet of sands in three separate zones. Alberts promised close cooperation with compacting oil states in the event of a strike in Arizona.

E. de Golyer, reporting for the Committee on Minimum Standards, recommended that conservation boards forbid production of any pool in excess of the optimum rate of flow, and urged proration orders designed to prevent cross-drainage. He thought these suggestions, if followed, would eliminate pressure differentials between leases within a reservoir and automatically eliminate excessive drilling.

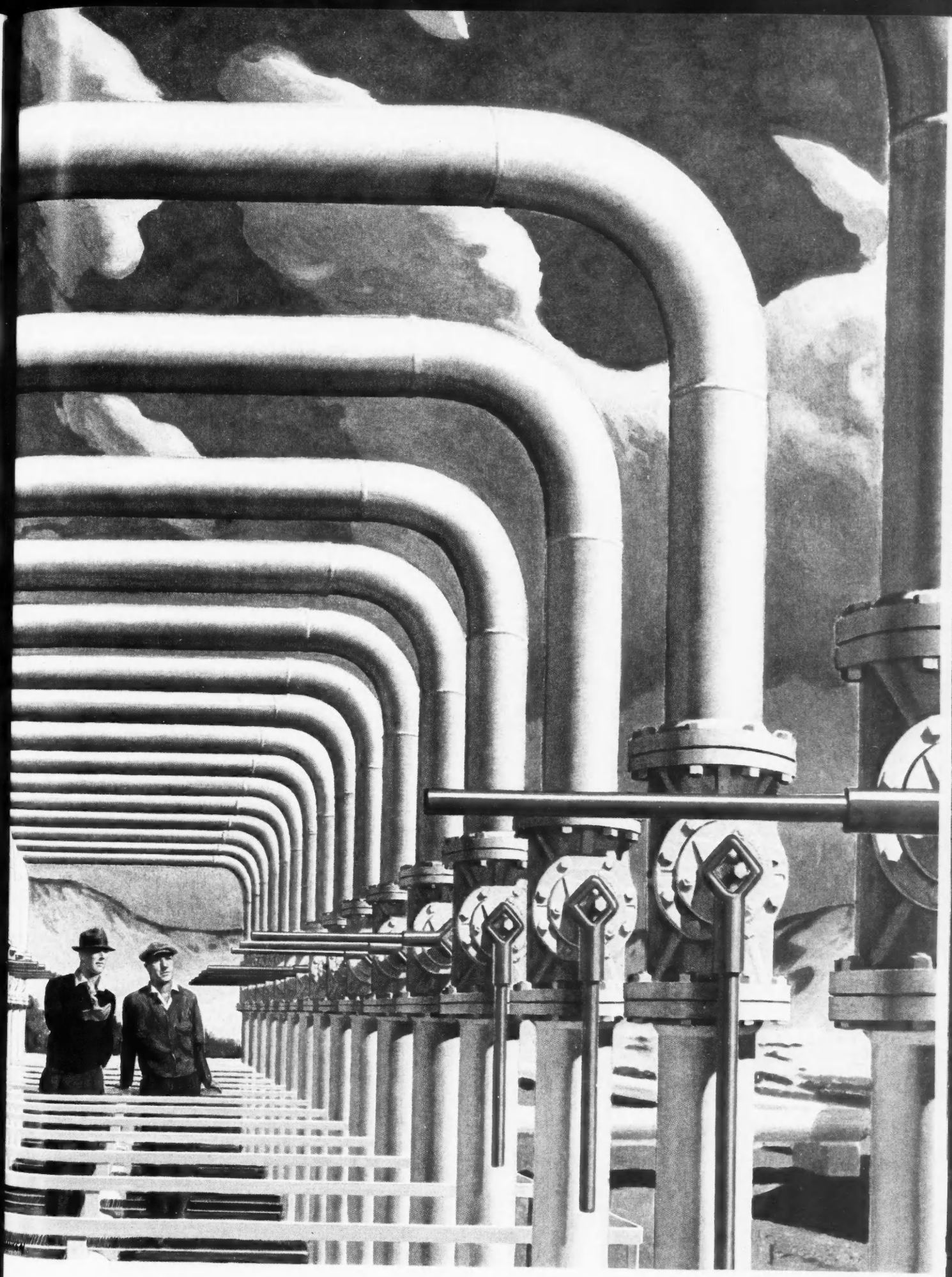
He suggested that two committees be appointed, the first to study proration policies in the various oil producing states. This committee would be made up of representatives from the conservation boards. A second committee, composed of engineers and technical men, would then make recommendations as to standardization of practices and codify the work of the first committee. De Golyer said that adequate production standards were badly needed in the industry.

The Interstate Compact Commission referred this report to its members for study and action at the fall meeting.

Outlook Not Bright

Dr. A. G. White of the United States Bureau of Mines indicated that the marketing picture was not bright for the third and fourth quarters of 1939. He blamed excessive runs by refiners for most of the trouble, since production, especially east of California, has been held well within demand.

He pointed back to 1937, when there was an excess of 6,000,000 barrels of gasoline produced, and declared that this had never been assimilated. During recent months, when the demand has been unusually heavy, refiners have furnished supplies from current production rather than drawing on stocks. Ordinarily, he said, runs are highest in September and October, but unless the current rate is not exceeded, another lump will be added to the stocks



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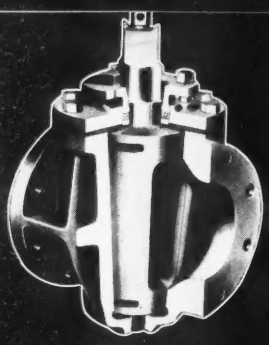

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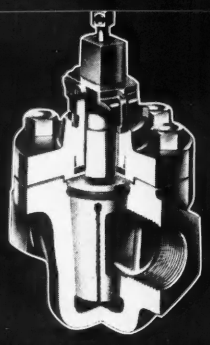

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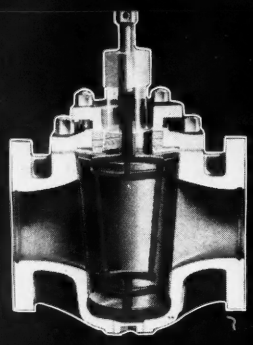

STANDARD TYPE

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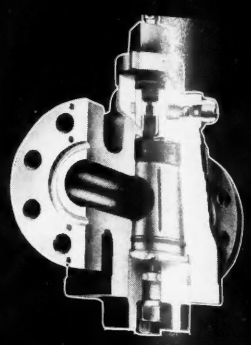
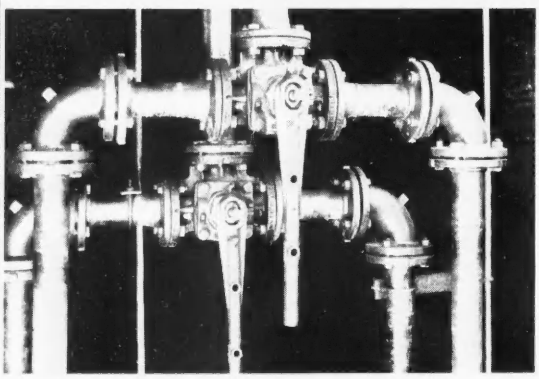


Round Opening HYPRESEAL TYPE

The all-service valves



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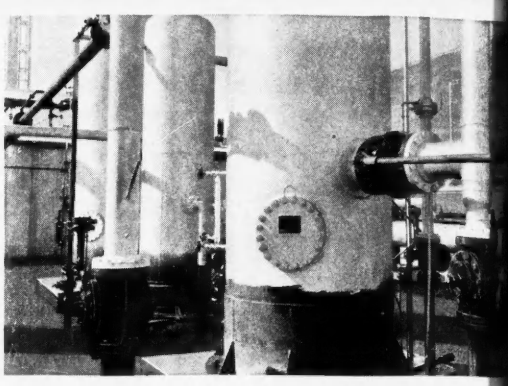
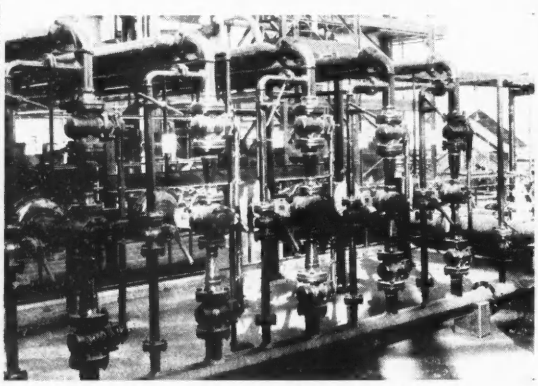
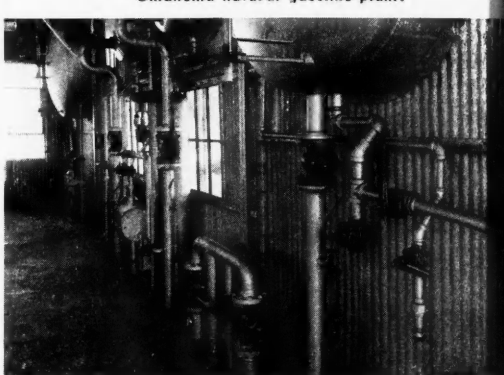


Nordstrom 8" and 10" Valves on absorber lines in an Oklahoma natural gasoline plant.

Tank battery in Louisiana, showing flow lines and discharge lines with Nordstrom Valves.



Fuel gas control manifold to heaters for combination cracking and crude units, Nordstrom-equipped.



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at the end of the year, simulating the 1937 situation.

All other products are in fairly good condition, he said, and there have been withdrawals from crude storage in Wyoming, Texas, Oklahoma and other states. The demand for fuel oils has been reestablished, but imports have increased, taking part of the domestic market.

Dr. White recommended continued production of 1,500,000 to 2,000,000 barrels monthly less than bureau demand figures to bring crude stocks in line. Because weather conditions during the latter part of 1938 were exceptionally favorable to the gasoline market, White expects the demand to be lower for the same period of 1939.

Roeser Scores Imports

Charles F. Roeser, president of the Independent Petroleum Association of America, likewise decried the lack of cooperation on the part of refiners and importers. He said imports had increased materially and that the Gulf Oil Corporation and Standard Oil Company of New Jersey were largely responsible, since they control 80 percent of the imported oils. He pointed to steady withdrawals of crude from storage and charged that recent rumors of price cuts were based on efforts of the larger storers to fill their tanks with cheap oil.

Roeser declared that there was no justification of a price reduction now with production consistently below daily demand. However, since refiners have consistently failed to "adjust operations to reach desired economic levels," he urged the state regulatory bodies represented to continue keeping production within demand for a year or two more.

He pointed out that the federal government had recently refused to accept the prevailing price of crude as the "fair price" in a California settlement, and expressed the opinion that producers should keep their oil in the ground until refiners are willing to pay a fair price.

"The producers have been paying a fine of $10,000,000 monthly since the latter part of 1937," Roeser said. He referred to the price cuts instituted at that time when there had been produced more oil than could be consumed currently.

"The compacting states must continue to absorb Illinois until producers there realize how they are damaging themselves. The independent producers have had prosperous years recently, and they prefer to keep their oil in the ground till it can be sold at a reasonable price."

Inconsistency Scored

Attacks on oil and gas operators who urge conservation in one state and oppose it in another was the feature of the Thursday meeting. Senator Tom Anglin of Oklahoma singled out Pure Oil Company and charged it with supporting conservation in Texas and Oklahoma, while it was doing "more to prevent the passage of a proper conservation law in Illinois than all other operators combined."

Texas Senator Clint Small, Amarillo, also attacked this group in the featured address of the day. He outlined the history of development of conservation laws resulting from the discovery that wasteful practices were not in keeping with public policy.

"We took the wrong approach at the start," Small said, "trying to stimulate the price and furnish every operator with a market. Our purpose now is conservation for the public welfare. Our law was held valid when we distinguished between public and private property rights and learned where the public interest stopped and private property began. Our legislature now considers price only so far as is necessary to keep supply and demand in balance.

"As we eliminate selfishness and approach the problem from the standpoint of conservation alone, proration legislation becomes simpler. Unfortunately, all who profess to be conservationists are not so at heart. Some operators follow established conservation policies regardless of cost to themselves. There

Bureau Estimate Up

August demand will call for 3,521,900 barrels daily, says Bureau of Mines . . . Runs to stills to be higher by 2,728,000 barrels next month.

A daily production of domestic crude oil of 3,521,900 barrels will be required to meet demand during August, it was forecast July 20 by the Bureau of Mines.

The August figure is 8700 barrels above the estimate for July and 18,900 barrels above the actual average demand of August, 1938.

Runs to stills during the coming month are figured at 104,080,000 barrels, or 2,728,000 barrels above the actual for August of last year, but almost half this difference, the bureau pointed out, represents an estimate for increased runs of foreign oil.

Crude Stocks Down

Daily average crude production and runs to stills during the four weeks ended July 1 were 3,453,000 and 3,476,000 barrels, respectively, the bureau stated in a review of conditions. During that period total crude stocks declined 6,511,000 barrels, 374,000 barrels of which was foreign, leaving a net decline in domestic crudes of 6,137,000 barrels, or 219,000 barrels a day. The addition of this stock decline to production indicates that the apparent demand for domestic crude during June was 3,672,000 barrels a day, or 181,000 barrels in excess of the bureau's estimate.

Indicated total runs for June also were above the bureau's forecast, by 158,000 barrels, and the indicated reduction in finished and unfinished gasoline stocks for the month was only 2,680,000 barrels, compared with 7,616,000 barrels in June, 1938.

Fuel Demand Higher

A domestic demand for motor fuel of 52,900,000 barrels, or five percent more than the actual demand last August, was forecast by the bureau. Motor-fuel exports were seen remaining at the July level of 4,200,000 barrels, which would be 629,000 barrels below August of last year.

"Stocks of finished and unfinished gasoline on May 31 were 84,200,000 barrels," the report commented. "Statistics of the American Petroleum Institute indicate that they declined about 2,680,000 barrels during June, which would bring them to approximately 81,500,000 barrels on June 30. As indicated above, excessive crude runs to stills have prevented stocks from being reduced at the normal seasonal rate in spite of a record demand. If the industry is to avoid entering the winter season of light demand with excessive stocks, a drastic reduction in runs is indicated for the coming weeks. The bureau estimates a minimum reduction in gasoline stocks of 6,200,000 barrels during August."

With benzol and direct sales of natural gasoline estimated at 900,000 barrels, refinery production for the coming month is placed at 50,000,000 barrels, distributed among the several districts as follows: East Coast, 6,560,000 barrels; Appalachian, 1,790,000 barrels; Indiana-Illinois, 8,870,000 barrels; Oklahoma, 2,970,000 barrels; Kansas-Missouri, 2,570,000 barrels; inland Texas, 3,670,000 barrels; Texas Gulf Coast, 13.250,000 barrels; Louisiana Gulf Coast, 1,550,000 barrels; inland Louisiana-Arkansas, 930,000 barrels; Rocky Mountain, 1,260,000 barrels; California, 6,480,000 barrels.

Natural gasoline to be blended at refineries is estimated as 6.5 percent of the total gasoline production, or 3,250,000 barrels, and the yield of straight-run and cracked gasoline as 44.9 percent which, applied to the production of 46,750,000 barrels gives crude runs of 104,080,000 barrels, or 3,357,400 barrels daily. The estimate for foreign crude runs is 3,500,000 barrels.

Exports of crude are estimated at 7,000,000 barrels, or 600,000 barrels above the July estimate. The estimate for fuel and losses is 1,600,000 barrels.

State Allocations

The total demand for domestic crude, accordingly, will be 109,180,000 barrels, or 3,521,900 barrels daily, allocated among the producing states as follows: Texas, 1,428,100; California, 595,100; Oklahoma, 448,100; Louisiana, 259,300; Illinois, 201,900; Kansas, 168,700; New Mexico, 111,000; Wyoming, 77,100; Michigan, 54,200; Pennsylvania, 52,900; Arkansas, 51,900; Montana, 16,400; New York, 16,000; Kentucky, 15,000; West Virginia, 11,000; Ohio, 8400; Colorado, 3900; Indiana, 2900.

are some conservationists in Texas who are not conservationists in Illinois. I wish there was some way to punish them, but the states cannot do it and I do not want it done by the federal government. How they can ask for "justice" here and commit the same crimes complained of in Illinois is beyond me.

Gas History Repeated

"The same thing has happened in gas proration in Texas. Four years ago we passed the sour gas proration law, since sustained by the courts. This was to protect the holders of large acreage from the ravages of small leaseholders who had taken far more than their share of the gas. This year when a bill was offered to prorate sweet gas the sponsors of the sour gas bill opposed and defeated it. This is the same position some Texas operators have taken in Illinois. They have prevented some states from entering the compact and passing laws to prevent waste and protect the public interest.

"I am telling you this," Small said, "not in a spirit of bitterness, but in an effort to aid in eliminating practices that prevent conservation boards from functioning properly. This variation in public policy from state to state is injurious. From this standpoint the industry is its own worst enemy.

"The courts have held that the states have the power to control production for waste prevention, but this production must be allocated on the basis of oil in place, regardless of the number of wells drilled, providing this number is sufficient to drain the reservoir adequately. The supreme court holding requiring each operator to construct his own gas pipe line and find his own market is ridiculous. Gas proration in Texas has failed because the courts though the legislature was attempting to divide markets. This is not the case.

"The state has been good to the gas companies and limited the use of sweet dry gas to light and fuel. This gives these gas companies a monopoly permitting them to drain all other properties, unless some gas is purchased by the pipe line operators.

"Will Texas permit this? That is the problem before the Texas Railroad Commission. Since the courts have sustained the right of the state to limit the use of this resource under the police powers, it is the duty of the state to see that allocations are equitable.

Case in Panhandle

"The nine Panhandle pipe line companies drain gas from 1,000,000 acres with wells located on 10,000 acres. Any government is insipid that will permit this. Recently these companies have dropped leases on 100,000 acres. They may drop more, yet drain the entire field.

"The industry," Small concluded, "cannot advocate one policy in one place and a different policy in another and expect legislators to rely on its business integrity to protect you from the demagogues who would prey on you."

Harold Feld, representing Independent Petroleum Association of America, read "Minimum Standards Recommendations."

Clayton Orn, Fort Worth attorney for Cities Service Oil Company, at whom Small had directed his attack on Panhandle gas proration, defended the action of his company. He said that the legislation offered would help those who had already recovered far more than their share of the gas.

"Cities Service has $150,000,000 invested in pipe lines to protect and pay interest on, and the courts have held that it is not necessary to divide the market where there is no physical waste. Orders such as this should be applied to new fields, not to fields where production has taken place for 15 years," Orn declared.

Illinois to Soar

Higher production for Illinois was predicted by State Geologist A. H. Bell, who said the peak of some 300,000 barrels daily should be reached this fall or next spring. The new Salem field is now producing 150,000 barrels daily, 57 percent of the state total, and is about half drilled. There are 1048 wells in the field. It is producing from three sands and deeper production may be found. He estimated ultimate recovery from the field at 200 to 300 million barrels. Wells, however, decline rapidly. One Salem producer came in for 2640 barrels and was down to four barrels daily at the end of the year. This condition is general.

Marketing conditions are difficult, and in some fields purchasers pay one price for part of the oil and less for the remainder from the same well. Several new fields along the Wabash River in Indiana and Illinois threaten to complicate the situation. Although one legislative committee recommended no conservation law be enacted, another committee is studying the problem now, and the Compact bill has been re-enacted. He estimated current recovery at about 30 to 40 percent of the oil in place and believes it could be bettered with conservative operation.

Hines Baker, Humble Oil & Refining Company vice president, denied his company or Standard Oil Company of New Jersey was increasing imports or refining too much crude. He said that the net import increase for the year would be about three percent and explained that increases in recent months had been caused by strikes which tied up tankers in the spring. Humble crude stocks are down 20 percent and refined stocks 14 percent lower than last year, Baker said, and the New Jersey company has 500,000 barrels less gasoline on hand than at the same period of 1938. Both Baker and John Suman, another Humble vice president, declared their companies were making substantial contributions to the welfare of the industry.

Should Stick to Purpose

"No industry," declared Suman, "deserves the protection of the state if it does not keep in mind the public welfare. The Compact should stay closer to its principal purpose, to prevent waste. If all United States oil fields were operated today so that there was no preventable waste, there would not be produced enough oil to supply the demand," Suman said.

At the conclusion of the meeting Chairman Ernest Thompson pointed out that there was represented 70 percent of the total production of the United States. The time and place of the next meeting was left to his discretion.

Interstate Oil Compact extended by Roosevelt

Extension of the Interstate Oil Compact for a period of two years was assured July 20, when President Roosevelt signed a resolution approved by House and Senate July 14.

Illinois governor extends membership in oil compact

While delegates to the quarterly meeting of the Interstate Oil Compact Commission were convening in Santa Fe last week, Governor Henry Horner of Illinois affixed his signature to a legislative bill extending the state's participation in the commission for another two years. As before, however, Illinois' participation in the compact will mean nothing, as the state continues without legislation controlling production.

Oil at the Capitols

Conservation measure planned to be initiated in present session of Congress will have features suggested by Resources Committee

New oil conservation legislation, probably based upon the recommendations made last January by the National Resources Committee, is expected to be introduced in Congress this week, for consideration during the summer and enactment early next session.

Within the next few days, President Roosevelt will reveal to Congress his desire for a new study of proposals for conservation, to be undertaken during the coming recess so that legislation may be drafted before the next session convenes in January.

The President's determination to ask for legislation was reached at a conference July 20 with Secretary of the Interior Harold L. Ickes, Chairman Clarence F. Lea of the House Interstate Commerce Committee, Representative William P. Cole, Jr., of Maryland, chairman of that committee's oil group; George Holland, head of the Oil Conservation Board, Dr. John W. Frey, marketing expert, and other officials of the Interior Department.

The President's desires are expected to be disclosed in a letter to be sent, presumably to the House Committee, suggesting that the work of the Cole Subcommittee of 1934 be brought up to date. No details of what form the projected legislation will take were disclosed fol-

lowing the White House conference, but it was indicated that whatever measure was passed would provide for administration by the Interior Department, rather than the creation of a separate agency, and would be so written as not to infringe upon the rights of the states.

While those who conferred at the White House refused to divulge details of the conversation, it is understood that the proposed legislation will be designed to prevent waste in the oil industry. To that end, it may well include the unit-development plan and other reforms adopted by Secretary Ickes for the public lands and long urged by him upon the industry generally.

The basis for the projected legislation, it was learned, will be their report submitted to the President January 19, last, by the National Resources Committee, in which it was recommended that an appropriate conservation agency be set up to administer the federal interest in the oil and gas industry and to make necessary rules and regulations concerning the production of and commerce in oil and gas. That agency, the report held, should have the authority "to require that oil and gas be extracted by such methods as are adequate to avoid waste and to protect the interest of all producers drawing from a common reservoir." All this should be done, however, in cooperation with the states.

The committee suggested the enactment of a federal measure "defining in general terms miniumum standards for the production and transportation of oil and gas; creating an appropriate federal administrative agency; and providing for the conduct of hearings by that agency in order that the experience of the federal government, the state regulatory commissions, and the industry may be pooled in the establishment of detailed standards and regulations designed to protect the national interest in the scientific production and conservation of these irreplaceable resources.

"It is recommended, also, that such legislation provide a reasonable period —say six months—between the promulgation of these regulations and their enforcement to give the state regulatory agencies opportunity to bring their own regulations in conformity with the minimum national standards, thereby minimizing the necessity of federal supervision.

"Regulation under federal auspices should be coordinated with a rational policy concerning exports and imports of petroleum undertaken with the aim of conserving the nation's resource."

As part of their contribution to the conservation program, it was held, the states should enact legislation superseding the law of capture by the rule of ownership in place. "The rule of ownership in place is essential if scientific development and operation of oil fields or reservoirs is to be generally adopted, since scientific operation contemplates the operation of any one pool as a unit," it was pointed out by the committee.

It was admitted by Secretary Ickes that the situation is too complex to permit any action at this session of Congress and explained that it is the desire of the President that a bill be introduced and be studied by the Cole Subcommittee during the recess. Representative Cole said he would accept the assignment and that public hearings would be held some time during the summer.

Louisiana Rumored Cause

While the department and congressional representatives who called at the White House refused to confirm the report, it was rumored that the revived interest in oil conservation was precipitated by the Louisiana situation.

For nearly two years, there have been recurrent rumors that the Louisiana situation was unsatisfactory and representations have repeatedly been made to the Interior Department that a tender board should be established in that state. Some months ago, an investigation of the situation was ordered by Secretary Ickes, who later announced that it had not disclosed any situation which could not be taken care of by the state authorities.

The matter was again brought up this spring during hearings on the extension of the Connally Hot Oil Act, when witnesses before the Senate Finance Committee charged that there was widespread running of hot oil by Louisiana operators. Representatives of the major companies also are said to have complained of the situation, and shortly after the "breaking" of the Louisiana State University scandal it became apparent that the oil industry would be involved in the disclosures which would follow.

Evidence of the growing concern of the administration over the situation was further seen in the announcement by Secretary Ickes July 14 that he had ordered the establishment of an investigative office in New Orleans with Senior Examiner Clifford C. Rowland in charge. Rowland has conducted several investigations in the past in Louisiana and other states and the expectation is that he will uncover vast violations of the state conservation law, according to reports from New Orleans.

The support of the President in the new move to strengthen the oil conservation program is understood to have been sought by Ickes. The White House conference was called after the President had been fully apprised of the situation by Ickes.

The Cole Subcommittee in 1934 made an exhaustive study of conditions in the oil industry, in the course of which members visited most of the producing states for inspection of oil fields and informal conferences with men associated in various capacities with the petroleum industry and state officials.

The subcommittee in 1935 recommended that the federal givernment should permanently interest itself in the oil industry and center the handling of oil matters in a single agency, possibly the Bureau of Mines.

That agency, it was suggested, should have authority to make continuous studies of the petroleum reserves, encourage discoveries of new pools; assist in improving methods of production; study the possibility of repressuring in various existing fields; determine total demand for petroleum and its products; have jurisdiction over the management of oil-producing public and Indian lands; be given jurisdiction to establish pipe-line rates; study and report on the advisability of divorcing pipe lines; control imports, etc.

Allowable Picture

Kansas Commission may adopt acreage factor in determining allowables . . . Changes in proration methods wanted for several fields in Arkansas

California allowable hiked 3000 barrels

The Central Committee of California Oil Producers voted to increase the state's crude allowable to 598,300 barrels per day for August, this being a 3000-barrel increase per day over July.

In order to care for new production the committee voted to reduce the top allowable of 450 wells from 250 barrels per day to 240 barrels per day. Other reductions in smaller wells were also necessary because of the number or of new completions anticipated for August.

Members of the committee said August would prove to be an exceptional month insofar as new production is concerned.

Two suits attack validity of East Texas permits

Two suits attacking the validity of permits to drill in East Texas, each based on Federal Judge R. B. McMillan's decision in the Rowan & Nichols case, have been filed in Federal District Court at Austin.

Selby Oil & Gas Company and Lewis Production Company were plaintiffs in the first case, contesting a permit to Hastings & Dodson to drill a second well on a four-acre tract offsetting them in Rusk County.

"If any disparity exists in density, the appropriate and legal method is by adjusting allowables and not by granting wells," the petition said. This was in substance what Judge McMillan ruled in the Rowan & Nichols case.

Sun Oil Company was plaintiff in the other case, complaining of four permits granted to G. E. Burford on a strip of 2.33 acres. With many more allegations, including the allegations that almost identical permits to a previous lessee of the land had been enjoined by State District Court, Sun's petition made essentially the same contentions.

Neither company asked temporary relief, hence the cases will be submitted at the January session of court in Austin, unless attorneys for the plaintiffs and the state get together prior to then for a special hearing.

Market Situation

Withdrawal of 1,407,000 barrels of gasoline and 2,219,000 barrels of crude oil from storage in past week improves industry's statistical trend

Oil's storage situation improved the past week

A more favorable trend of the industry's statistical condition was in evidence during the week ended July 15, as another reduction in crude runs to stills brought a sufficient decline in gasoline production to permit substantial withdrawals from gasoline stocks that were considered more normal for this season of the year.

With withdrawals from gasoline storage in recent weeks comparatively small, these inventories have been coming down much more slowly than desirable. Therefore, the accelerated reduction rate last week was decided favorable.

Whereas gasoline storage earlier this year was held materially under last year's corresponding levels, for several months they have been reduced so slowly they have failed to hold to the 1938 trend. Consequently, during the last three weeks they have been above the level of a year ago, when excessive quantities caused a softening of the market structure during fall months.

Gasoline Production Down

Average daily production of gasoline during the week ended July 15 fell 7900 barrels from the previous week to rest at 1,617,100 barrels daily, as runs to refinery stills were curtailed 30,000 barrels to 3,390,000 barrels per day. The slackening of refinery activity, which placed the July 15 figure 85,900 barrels daily lower than the all-time peak of two weeks ago, was the most encouraging economic development of the week. At their reduced level, however, runs to stills were still 6.1 percent greater than a year ago; showing the need for further reductions.

This lowered refinery ouput permitted a more normal withdrawal of gasoline from storage for this season of the year. Inventories for this product were cut 1,407,000 barrels to 79,416,000 barrels, the lowest level since early February this year. However, at their reduced volume gasoline stocks were still 0.9 percent higher than at this time in 1938.

Fuel Oil Stocks

Stocks of gas oil and distillate fuels continued to build against the heating season, rising to 33,673,000 barrels during the week ended July 15. The inventory of these oils is only ½ of 1 percent larger than at this time last year, although demand during the winter is expected to be on a higher level than last year.

Stocks of residual fuel oils, used as fuel by industry, continued the off-season climb, rising 581,000 barrels to the 114,075,000-barrel mark; 4.8 percent lower than last year. Demand for these oils is firmer than it was last year.

Crude oil stocks were cut to 269,348,000 barrels by a 2,219,000-barrel reduction during the week ended July 8. The diminution brought the 1939 inventory 7.1 percent lower than that at July 9, 1938.

The reductions in both gasoline and crude oil stocks were obtained despite a minimum change in crude oil production, which was but 100 barrels less than the preceding week in averaging 3,529,700 barrels per day.

Finished product prices unchanged during week

Refined products prices in the oil industry the past week were generally firm.

Crude oil prices also went unaltered with the exception of a cut in the Shreveport, Louisiana area, and boosts affecting southeastern Kansas and southwestern Michigan.

Gasoline tank car prices at Chicago and elsewhere went unaltered although all grades were offered freely in the open market, especially the leading varities.

Kerosene movements were slow. An Oklahoma refiner lowered his bid ¼ cent to 3⅞ cents. Other quotations ranged from 3⅝ cents to 4⅝ cents for the 42-44 water white grade.

Fuel oil prices, cut on the Chicago market lately, were advanced in the Eastern domestic markets, moving up ⅛ cent to 4 cents for No. 2 oil.

Higher prices for Diesel oil prevailed along the north Atlantic seaboard.

U. S. motor gasoline at Oklahoma refineries ranged last week about as follows: 62 octane and below, 4¼ to 4⅝ cents a gallon; 63 to 66 octane, 4½ to 4⅞ cents; 67 to 69 octane, 4¾ to 5⅛ cents; 70 to 72 octane, 5 to 5⅜ cents.

Corresponding prices in the Chicago market were: 4 to 4½ cents, 4¼ to 4½ cents, 4⅜ to 4⅞ cents, and 4½ to 5¼ cents.

In East Texas, 60-62, 400 end point gasoline was priced generally at 4¼ cents a gallon.

Natural Gasoline

Natural gasoline, grade 26-70, was selling in the Mid-Continent markets, f.o.b. refineries at 2¾ cents a gallon, and sales were reported at the same price f.o.b. Breckenridge, Texas.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅝ to 4¼ cents a gallon for the 41-43 water white grade, and from 3¾ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago mar-

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937						
August 28	**3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	◎3,455,000	307,974,000	65,620,000	116,472,000	
1938						
March 19	3,433,550	3,080,000	306,380,000	**93,192,000	122,067,000	
June 25	3,083,900	3,025,000	293,463,000	82,412,000	25,343,000	112,458,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	¶67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	*87,769,000	21,058,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	†25,844,000	†108,409,000
May 6	3,580,900	3,275,000	*278,607,000	86,216,000	26,167,000	108,597,000
May 20	3,438,400	3,460,000	277,068,000	84,294,000	26,389,000	109,405,000
May 27	*3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 3	3,558,800	3,415,000	277,947,000	83,637,000	27,440,000	110,219,000
June 10	3,376,950	**3,510,000	274,692,000	82,716,000	29,357,000	111,239,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 1	3,463,000	3,480,000	271,567,000	81,102,000	31,230,000	113,388,000
July 8	3,529,800	3,420,000	§269,348,000	80,823,000	32,435,000	113,494,000
July 15, 1939	3,529,700	3,390,000	.....	79,416,000	33,673,000	114,075,000
July 16, 1938	3,343,100	3,195,000	‡290,469,000	78,721,000	+	††
Change in past year	+5.6%	+6.1%	—7.1%	+0.9%	+0.5%	—4.8%

** All time peak. * Peak for 1939. § Lowest for 17 years. ‡ Stocks, July 9, 1938.
◎ Peak prior to 1939. ¶ Lowest for year.
† Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
+ Available data for year ago include only stocks at refinery, and not at terminals, in transit, etc., except in California. Those stocks on July 15, 1938, totaled 25,629,000 barrels, and comparable stocks on July 15, 1939, totaled 26,964,000 or 0.5% more.
†† Available data for year ago include only stocks at refinery, and not at terminals, in transit, etc., except in California. Those stocks on July 15, 1938, totaled 114,999,000 barrels, and comparable stocks on July 15, 1939, totaled 109,521,000 barrels, or 4.8% less.

ket were 3½ to 4⅛ cents and 3⅝ to 4⅜ cents.

In the Chicago market range oil was priced from 3¼ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3⅛ to 3¾ cents, and No. 1 straw from 3 to 3⅜ cents. No. 2 straw was 3 to 3¼ cents. No. 3 oil was 2⅞ to 3⅛ cents. No. 5 oils were 57½ to 65 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Encouraging were reports of moves to reduce freight rates on refined products in various sectors. A proposal to reduce petroleum rail rates from the Southwest into the Indiana marketing territory was before the executive committees of the freight bureaus involved at St. Louis, the final authority. At Tulsa a move was afoot to cut freight rates on natural gasoline moving to Arkansas refining centers by 5 to 6 cents per cwt.

Cross Lake crude price cut

Caddo Crude Oil Purchasing Company, and Atlas Pipe Line Company announced a price cut effective July 17 which brought the postings down 10 cents to 95 cents a barrel. The two companies buy 7500 barrels daily in the Cross Lake field, in the Shreveport, Louisiana area.

A Caddo Crude Oil Purchasing Company official attributed the cut to the uncertain relationship between raw and finished products brought about by the demoralization of the wholesale gasoline market.

Bloomingdale district crude price advanced 5 cents

Tri-Lakes Corporation, a Standard of Ohio subsidiary, has posted an 83 cent price per barrel for Bloomingdale district (Van Buren County) grade crude oil, to replace former 78 cent postings. Tri-Lakes Corporation is now buying approximately 9500 barrels per day from Bloomingdale's 1200-foot Traverse production. The price raise, which is not expected to reflect in Allegan or Kent County shallow fields, where an 88 cent price prevails, or in the basin fields, comes in the face of a drilling campaign that has completed 120 wells in the Bloomingdale district's five pools since January.

Southeastern Kansas crude prices boosted

Petroleum Products Company, Chanute, Kansas, has increased its posted crude oil price from 4 to 13 cents a barrel in the southeastern Kansas stripper area. The raise brings the price of 39-gravity oil to 90 cents a barrel, up 8 cents, while other gravities have been raised in proportion. However, this price is still below the postings of major purchasers in the area.

Congress paves way for levy on Osage oil

The Senate Indian affairs committee July 17 approved a bill which would permit the state of Oklahoma to levy a gross production tax upon oil and gas produced upon Osage nation land in Osage County. Also approved was a bill to permit leasing of coal and asphalt deposits of the Choctaw and Chickasaw nations.

Pipe Line News

West end of Illinois-Ohio line put into operation

The west end of Socony-Vacuum Oil Company's 365-mile, 10-inch crude line under construction from Wood River, Illinois, via the Illinois Basin field, to Lima, Ohio, was completed and placed in service late last week. Approximately 225 miles of the carrier was welded.

The five gangs are scheduled to finish by August 15. Bad weather during the early stage of construction and other unavoidable delays have thrown the project behind 15 days from the original schedule.

A 54-mile unit, extending west from Patoka to Mitchell Station, near Wood River, was placed in operation, but crude runs will be restricted for the time being to the filling of two 80,000 barrel tanks at Patoka and two 55,000-barrel tanks at Mitchell. One each of the same size tanks are to be added to these storage centers.

Patoka Station is the receiving point on the carrier for Illinois crude, with an 11 mile, 10-inch extension south to Sandoval, where connection is made with Magnolia Petroleum Company's 6-inch discharge line from its holdings in the Salem district. A six mile, 8-inch unit is being built parallel to the smaller line from Sandoval to the north end of the Salem area.

Socony-Vacuum Oil Company, Midland Pipe Line Division, has been adopted as the official identification of the trunk line.

J. L. Latimer, vice president and general manager of Magnolia Pipe Line Company, Dallas, an affiliated unit, is supervising construction.

To move Illinois oil to New Jersey refinery

Beginning immediately Standard Oil Company of New Jersey will pipe 5,000 barrels daily of Illinois crude to its Bayway, New Jersey, refinery, through facilities of Illinois Pipe Line Company, Southwestern Pennsylvania Pipe Line Company, National Pipe Line Company, Eureka Pipe Line Company, Southern Pipe Line Company and Tuscarora Pipe lines. This is only a temporary arrangement until outlet for the oil can be found in the midwest.

South Penn to discontinue purchase of certain crude

South Penn Oil Company, effective July 31, will discontinue purchases of Pennsylvania grade crude oil in the Buckeye Pipe Line Company lines, and after that date will no longer post a price for this crude.

It is believed that local refineries will begin to purchase much of the present southeastern Ohio production direct, making it uncertain just what effect the South Penn's action will have on producers of Buckeye crude.

"Owing to a decline in refinery demand, we find it necessary to discontinue the purchase of credit balances of Pennsylvania grade crude oil gathered by the Buckeye Pipe Line Company from and after July 31, 1939," the company's announcement said. "On and after August 1, 1939, our Joseph Seep Purchasing Agency will discontinue posting of a price for credit balances of Pennsylvania grade crude oil gathered by the Buckeye Pipe Line Company and all standing purchase orders will be cancelled as of the close of business on July 31, 1939.

Permission sought to lay Indiana-Illinois line

A petition seeking authority to lay a nine-mile natural gas pipe line from the Russellville gas field of Lawrence County, Illinois, to Vincennes, Indiana, was filed last week with the Federal Power Commission by Ralph R. Willis, Lawrenceville, Illinois. The project would cost $40,000.

The line would transport natural gas to Hoosier Gas Corporation for retail distribution in Vincennes, Washington and Princeton, Indiana. The Hoosier company now buys 350,000 cubic feet of gas a day from the Kentucky Natural Gas Corporation under contract, but probably could market an additional 300,000 cubic feet a day if the line were built, the petition states.

Humble authorizes two West Texas pipe lines

Humble Pipe Line Company has authorized 2 pipe line projects for West Texas. The company is to lay 5½ miles of 4-inch extension from a point near Crane Station, Crane County, on its New Mexico-McCamey multiple system, to the Sand Hills field to handle controlled production heretofore absorbed by Shell Pipe Line Corporation. The Sand Hills unit will have a station site near NEC PSL Section 19, Block B-27, as this point permits a gravity field gathering system.

Greater capacity for handling crude originating in Andrews and Ector counties will be provided by the installation of a 10-mile, 8-inch loop, parallel to an 8-inch carrier, between Judkins Station, south Ector County, to a point northwest of Crane Station, where two 10-inch and three 8-inch sections of the system join.

Two hearings called

The Texas Railroad Commission has called a hearing to be held in Austin July 24, on field rules for the new Bammel field in Harris County—Hearing on the Burns pool, in Clay County, has been called for August 2 at Austin. Field rules and regulations will be studied.

Daily refinery runs in May 3,411,000 barrels

Speeding up of refinery activities in May brought crude runs to stills for the month to an average of 3,411,000 barrels a day, 101,000 barrels above the April average and 210,000 barrels above the figure for May, 1938, it was reported July 18 by the Bureau of Mines.

Imports of foreign crude also increased considerably, the bureau announced, the daily average of 127,000

barrels being 29,000 barrels above that for April.

The report showed that receipts of crude at refineries totaled 105,851,000 barrels, of which 101,923,000 barrels was domestic and 3,928,000 barrels foreign, while crude runs to stills were 105,755,000 barrels and fuel and losses 72,000 barrels.

There was practically no change in stocks of crude held at refineries, which stood at 51,699,000 barrels May 31 as compared with 51,675,000 barrels at the beginning of the month.

Natural gasoline output off, but stocks up

Natural gasoline production in May registered a sharp drop, with average daily production falling to 5,799,000 gallons from 5,925,000 gallons in April. Output, however, continued above last year, when a May average of 5,685,000 gallons was recorded, it was disclosed by the Bureau of Mines July 18.

Because of the longer month, total production in May was above April output, 179,760,000 gallons against 177,744,000 gallons.

The chief decreases in daily average output occurred in the Panhandle and Appalachian districts, the bureau reported.

Stocks continued to increase, and at the end of the month there were 119,112,000 gallons held at refineries against 107,142,000 gallons on April 30, and 141,792,000 gallons at plants and terminals against 123,186,000 gallons.

Crude Production

United States output increased to 3,568,650 barrels; Illinois at peak with runs of 272,150 barrels daily

Crude oil production in the United States during the week ended July 22 was at an average rate of 3,568,650 barrels daily. Major gains in Kansas, Oklahoma and Illinois reacted with declines in Texas and Louisiana to establish a level 17,700 barrels higher than that of the week previous. Bureau of Mines estimate of demand for domestic crude was 55,450 barrels under output as the economic allotment went by the board in all but six of the producing states.

Texas production was checked at 1,349,600 barrels daily; off 2300 barrels from the average pace of the preceding week and 17,558 barrels less than the state proration program prescribed. Output was held 76,900 barrels below the bureau's estimate of economical production; a condition that occurred elsewhere only in New Mexico, Kentucky, and the Mountain states.

California slumped 11,200 barrels to bring production down to 614,200 barrels daily; within 19,200 barrels of accord with the voluntary proration program quota. Bureau recommendation was exceeded also by 19,000 barrels.

Changes in the Oklahoma allowable designed to reduce production 25,000 barrels daily from the June average seemed to be having an opposite effect as an 11,025 barrel gain on the previous week pushed production to the 466,425-barrel daily level. State and federal allocations were overrun by 38,425 and 10,325 barrels respectively.

Louisiana yield fell 550 barrels short of the prior week's high figure, averaging 276,450 barrels daily. Conservation allocation and federal allotment were exceeded by 12,287 barrels and 11,950 barrels, respectively.

Illinois appeared to be within a week or two of displacing Louisiana as the fourth most currently productive state in the nation. Last week's gain of 7750 barrels brought about a new record level at 272,150 barrels daily. The out-moded bureau estimate of demand trailed 84,750 barrels behind.

Kansas lifted 178,075 barrels daily as it gained 11,325 on the week before and overran state and federal quotas by 12,195 and 17,775 barrels respectively.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (July)	State Allowable in July	BARRELS DAILY FOR WEEK ENDED July 22	July 15
TEXAS—				
Texas Panhandle			67,650	79,450
North Texas			82,250	86,500
West Central Texas			32,500	32,800
West Texas			238,500	226,350
East Central Texas			95,850	100,000
East Texas Field			378,600	377,500
South Texas			227,750	226,050
Texas Gulf Coast			226,500	223,250
Total Texas	1,426,500	1,367,158*	1,349,600	1,351,900
CALIFORNIA—				
Long Beach			45,900	45,900
Santa Fe Springs			27,300	28,200
Huntington Beach			26,600	25,900
Dominguez			17,300	17,450
Ventura Avenue			35,900	36,600
Midway-Sunset			54,500	54,800
Kettleman Hills			53,500	53,300
Wilmington			84,700	82,500
Others			268,500	280,750
Total California	595,200	595,000†	614,200	625,400
OKLAHOMA—				
Oklahoma City			112,975	102,025
Seminole Area			105,225	111,550
Fitts			26,025	22,875
Others			222,200	218,950
Total Oklahoma	456,100	428,000	466,425	455,400
LOUISIANA—				
North Louisiana			71,950	72,050
South Louisiana			204,500	204,950
Total Louisiana	264,500	264,163	276,450	277,000

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (July)	State Allowable in July	BARRELS DAILY FOR WEEK ENDED July 22	July 15
ILLINOIS—				
Salem			131,950	133,500
Loudon			64,900	62,900
Other New Pools			67,200	60,000
Old Pools			8,100	8,000
Total Illinois	187,400		272,150	264,400
KANSAS—				
Burrton-Haven			10,225	10,325
Russell County			27,400	24,325
Silica			14,100	10,700
Others			126,350	121,700
Total Kansas	160,300	165,880	178,075	166,750
NEW MEXICO	116,100	116,100	110,500	108,250
EASTERN STATES—				
Pennsylvania Grade			68,950	68,500
Others, Eastern			3,300	3,200
Total Eastern States			72,250	71,700
MOUNTAIN STATES—				
Wyoming	73,200		62,800	63,300
Montana	16,100		16,000	15,850
Colorado	4,800		4,050	4,050
Total Mountain States	94,100		82,850	83,200
MICHIGAN	53,200		67,400	69,250
ARKANSAS	53,900	61,117	60,950	59,700
KENTUCKY	15,900		14,400	14,450
INDIANA	2,600		3,400	3,550
Total United States	3,513,200		3,568,650	3,550,950

* Daily average, considering Saturday-Sunday shutdowns, water exemptions, and exemption at Rodessa and elsewhere.
† Recommendation of Central Committee of California Oil Producer's Association.

WEEK'S DRILLING HIGHLIGHTS

Michigan

Walker, Kent County, was again extended—this time southeast. Last week's extension brought 21 locations.

New Mexico

Loco Hills, Eddy County, got a mile southwest extension; it promises to assume sizeable proportions. Chaves County reported an oil show in one wildcat and another deeper one getting ready to complete.

West Texas

Cedar Lake prospect, Gaines County, has a wildcat running 341 feet higher than the nearest failure and 135 feet higher than an abandoned pumper. The gap between Bennett and Wasson fields, Yoakum County, was shortened by a producer. Productive acreage was added to the northwest flank of Sharon, Scurry County.

Southwest Texas

Performance of a well a mile from La Gloria, Jim Wells County, may put the gas distillate field in the oil field class. Robstown's potential discovery well awaits orders before completing. Near Volpe field, a Webb County wildcat was rated at 96 barrels on pump. The offset to White Creek's discovery well in Live Oak County failed to make a well.

Arkansas

A double extension, one east and the other west, was indicated by outposts of Magnolia field, Columbia County. The third well at Atlanta was coring porous oolitic lime and looking favorable.

Comparison of Permits Granted for New Wells

STATE	Week Ending July 22	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	4	19	133	76	247
California	9	53	550	401	1,146
Louisiana	32	93	715	396	1,214
Kansas	37	88	838	525	1,453
Michigan	29	82	741	209	953
Oklahoma	30	109	1,155	648	1,978
Texas	276	671	8,059	4,591	12,369
Total	417	1,115	10,037	6,846	19,360

Illinois

A wildcat is testing 10 feet of Benoist saturation in one-pumper Shelby County. Three miles from production a Wabash County wildcat topped saturation at 2403 feet that looks good for 500 barrels.

Indiana

Northwest of Oakland City pool 5 miles a wildcat got 2 feet of saturation in Hardinsburg sand at 1345 feet. The state's first Aux Vases sand producer, located in Spencer County, was making 60 barrels daily.

Kentucky

Near Beech Grove, McLean County, a wildcat prepared to test 4 feet of McClosky saturation. Jackson sand, heretofore primarily a gas reserve for western Kentucky, yielded a 20-barrel well in Hancock County.

North Texas

Bonita pool, Montague County, chalked up a well flowing from a sand 1000 feet below the zone from which two previously completed pumpers produce. A southwest extension for Hull-Silk, Archer County, flowed 50 barrels an hour. Burns-Browning pool of Clay County seems in line for a ½-mile extension northwest.

Oklahoma

Dunn pool of Creek County got a new pay zone, while new producing zones were being tested in Doyle pool, Stephens County, Coyle pool, Payne County, and Hazel pool, Seminole County. Cement pool, Caddo County, got an extension, while a wildcat indicated a new shallow spot for Pontotoc County.

Kansas

Field extensions were recorded in Barton, Cowley, Stafford, Rice and Graham counties. Other outposts look good at Sittner, Mueller and Graber pools.

Rocky Mountain States

A second structural high for the Basal Sundance producing horizon that will call for 50 wells appeared a certainty this week as 4 Lance Creek wells were completing in the eastern sector of the field nearly 2 miles from the east boundary of the Sundance participating area. The Divide Creek, Colorado, wildcat set a new Rocky Mountain depth record, abandoning at 10,815 feet.

California

Two strikes indicated possibility of a field 6 miles long on the floor of San Joaquin Valley.

Summary of Wells Completed in the United States Week Ending July 22, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total this Date 1938
Alabama	....	....	....	....	.....	1	2
Arkansas	6	6	....	....	3,578	130	131
California	21	17	1	3	13,196	581	696
Colorado	....	....	....	....	.....	12	5
Florida	....	....	....	....	.....	....	....
Illinois	120†	98†	1	21	38,421	2,078†	636
Indiana	10	3	1	6	620	96	70
Kansas	33	25	1	7	21,367	748†	986
Kentucky	17	8	....	9	162	352	409
Louisiana	22	17	....	5	4,334	567	621
Michigan	26	13	2	11	6,210	794	468
Mississippi	2	....	....	2	.....	6	11
Montana	2	2	....	....	450	70	33
Nebraska	....	....	....	....	.....	....	1
New Mexico	11	7	....	4	3,498	352	295
New York	18*	15*	....	3	59	290*	427*
Ohio	22*	5*	11	6	173	496*	525*
Oklahoma	41†	27†	1	13	4,381	1,116†	1,252
Pennsylvania	56	42	8	6	75	812	1,342
Texas	210	139	5	66	71,946	5,533	7,433
Utah	....	....	....	....	.....	....	2
West Virginia	12	2	7	3	10	274	398
Wyoming	2	1	....	1	510	69	60
Total this week	631	427	38	166	168,990	14,426‡	15,705‡⊙
Total last week	521	339	44	138	187,406	13,795‡	14,679‡⊙
Total this year	14,426‡	9,829	1,017	3,580	11,303,090	....	.....

* Includes water-input wells. † Includes salt water disposal wells. ‡ Includes 1 Georgia completion
⊙ Includes 2 Tennessee completions.

Oklahoma Fields

Several pools have tests trying for new producing strata. Cement pool, Caddo County, gets quarter-mile extension.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo—		
Magnolia, Surbeck 9, sw se se 3-5n-9w	536	3363
Carter—		
Ball et al, Krickenberger 1, ne se sw nw 20-3s-2w	*	293
Cleveland—		
Roker, Norman 1, nwc ne 17-9n-2w	100	7636
Comanche—		
Truitt, Fee 11, sw ne sw se 26-2n-11w	12	222
Fee 12, se ne sw se 26-2n-11w	14	235
Creek—		
Dunn et al, Anthis 1, 160 ft n nw se se 34-14n-10e	225	3196
Worley, Fee 1, nw ne sw se 34-14n-10e	360	3283
Anthony, Warlecy 4, ne se sw se 4-16n-12e	15	1889
Muskogee 5, swc ne 9-16n-12e	*	2085
McMahon et al, State 1, sw se nw 31-17n-10e	50	2750
Turnbow et al, Coonrod 1A, ne se se 3-19n-9e	*	2265
Grant—		
Smyth et al, State 1, c se sw 16-25n-4w	*	6217
Jackson—		
Gulf, Byrd 5, ne nw nw 14-1n-20w	*	1737
Lincoln—		
Stanolind Martinek 2, csl sw nw se 35-13n-5e	1250	4263
Clintworth, Bledsoe 1A, se nw nw 11-13n-6e	*	2977
Jones, May 5, se sw se 10-14n-6e	21	2997
McIntosh—		
Detrick, Porter 1A, ne nec sw 3-12n-14e	*	2870
Okfuskee—		
Summit, Steil 1A, c n½ sw 18-10n-11e	¶5	2980
Hourigan, Hudson 1A, swc 1-11n-8e	Abnd.	Lcn.
Oklahoma—		
Ohio, Dahl 10, ne se se 31-14n-3w	150	6405
Okmulgee—		
McAdams, Thompson 1, sw nw nw 29-15n-11e	*	3133
Hendrick, Rentie 13, ne ne sw nw 35-15n-14e (salt water disposal well)		798
Osage—		
Charles Petroleum, 2, se nw nw 10-28n-11e	130	977
Payne—		
Deep Rock et al, Hawk 7, ne nw se ne 9-18n-5e	73	3621
Pittsburg—		
Phillips, Hubacher 1, c nw ne 11-7n-15e	*	7731
Pontotoc—		
Senora, Osborn 1, sw se sw 8-5n-5e	*	2440
Pottawatomie—		
Denver, Stearns 3, sec nw 6-6n-5e	35	4181
Johnson et al, Barthelme 1, nwc 8-6n-5e	Abnd.	Lcn.
Kerr-Lynn, Ward 1A, c e½ se sw 25-7n-3e	80	4235
School Land 1A, nec nw 36-7n-3e	158	4244
Oklahoma Oil, Smith 8, swc se 25-7n-4e	*	3600
Pioneer, Green 1, sec ne 35-7n-4e	76	4286
Deep Rock, Tolin 4, sec sw 30-7n-5e	145	4312
Seminole—		
Culver et al, Burton 1, sw nw se 3-5n-5e	450	2668
Commercial, Peters 5, se ne nw 18-5n-8e	12	3893
Superior, Chippee 1, nw ne nw 13-6n-5e	35	2730
Smith, Norvell 1A, nw sw nw 29-6n-6e	Abnd.	Lcn.
Killingsworth 2, se sw ne 28-7n-6e	*	2227
Malernee, Mason 2, se sw ne 33-7n-6e	40	2880
McQueen, McCann 2, sec ne 33-7n-6e	110	2865
Cities Service, Fish "B" 5, nw nw sw se 19-7n-8e	271	4127
Ligon et al, Patterson 1, sw se se 24-8n-7e	31	3321
Sinclair Prairie, Campbell 5, se ne nw 6-9n-6e	*	4107
Stephens—		
Powell, Godfrey 1, sw nec nw 11-2s-8w	2	2125

*Failures; †Junked; ¶Million cu. ft. gas.

Tulsa.—Field activity for the past week in Oklahoma consisted of a new horizon for the Dunn pool, Creek County, with Doyle pool, Stephens County, Coyle pool, Payne County and Hazel pool, Seminole County, each testing for new zones. A shallow spot opener in Pontotoc County was indicated. Cement pool, Caddo County, received a ¼ mile extension.

Initial Wilcox pay was drilled as J. R. Higgins Drilling Company's Worley 1, NEc SW SE 34-14n-10e, Creek County, topped the sand at 3283 feet and drilled to 3295 feet, plugging back 2 feet. Upper Misener sand from 3184 to 3189 feet was shot with 15 quarts and the Wilcox shot with 50 quarts, the test flowing 360 barrels daily from both sands. Before shooting, the well was good for only 93 barrels, and a west offset to the discovery test, W. M. Dunn et al's Cantrell 1, rated at 100 barrels from Misener sand. Worley 1 is prorated to 100 barrels. In the same pool, Dunn and Athers' Anthis 1, SE NW SE 34-14n-10e, was drilling below 2225 feet. C. E. Beal et al has a rig up in SWc NE 34-14n-10e.

A new deep saturated sand in Doyle pool, Stephens County, was being tested in Sunray Oil Company's Hefner 1, SEc NW 12-1n-5w. The sand was drilled to 6000 feet and pipe set at 5640 feet. West Doyle pool is apt to prove small in extent as Phillips Petroleum Company missed Deese sand in Coombs 1, SE SW NE 4-1n-5w, and was drilling below 5995 feet. The discovery well, Culbertson 1, NEc SE 4-1n-5w, had the sand at 5578 to 5619 feet.

Payne County was active with the Ramsey pool drawing two starts and one test ready for completion, two wildcats drilling near Cushing and a completion for Coyle pool. Mid-Continent Petroleum Corporation et al staked Ramsey 11, NEc 18-18n-2e, a west offset to Ramsey 8, a 10,136-barrel producer and offset to the east by Brandon 6, coming in for the thirty-second producer. Same operators staked Simpson 2, SWc 7-18n-2e, a west offset to Simpson 1, good for 9962 barrels and outside the communitized block.

The thirty-third producer will be Mid-Continent Petroleum Corporation's et al Brandon 5, SW NE NE 13-18n-1e, at 4865 in first Wilcox. Olson Oil Company et al's Minnich 1, NE SW NE 3-18n-6e, northeast of Cushing, cored dry second Wilcox from 3566 to 3584 feet and plugged back to 3025 feet to test the Skinner. Five-inch casing was set at 2995 feet. West of Cushing Kenneth Ellison et al's Kelly 1, SE SE SW 27-18n-4e, was drilling below 2985 feet.

Coyle Pool Activity

Coyle pool, Payne County, has three tests drilling, one taking official potential and a northeast test showing up poorly. The Texas Company completed running tubing at Graham 3, C W½ SW SW 12-17n-1e, and was taking a test from the Wilcox at 4898 feet. Magnolia Petroleum Company's Cain 4, C NE SW 12-17n-1e, was shut down at 4850 feet with 800 feet of oil in the hole but no gas showing. The sand may be shot to stimulate flow. Helmerich & Payne's Collins 1, C E½ NW NW 13-17n-1e, was drilling below 4200 feet and Amerada Petroleum Corporation et al's Fruin 3, C W½ SE NW 12-17n-1e, was below Sylvan shale. Collins 1, at the south end of the pool, passed up saturated Layton from 3440 to 3494 feet. The pool produces from Wilcox although Hunton lime showed up good on drill-stem tests on many of the wells. If Layton series should prove commercial, it would give the pool two other possible horizons to depend upon.

North of East Ada district and south of West Francis pool, Pontotoc County, Betty Jane Oil Company had 200 feet of oil in the hole from a sand topped at 1149 feet and drilled only 2 feet at Julius 2, SE NE NW 6-4n-7e. Pipe was set at 1131 feet and operators are testing. Another test is planned by the same company, and Larson-Larue Development Company has spudded McCool 1, SE SW NE 6-4n-7e.

Three quarter mile northeast of Culver-Shepherd Hunton lime discovery, Seminole County, Kenneth Ellison et al's Wooten 1, NEc 3-5n-5e, acidized the Hunton lime, topped at 2680 feet and was testing. Wilcox sand was dry at 3333 feet and the hole was plugged back to 2870 feet.

A new horizon, whether productive or not is yet to be proven, was picked up on the west flank of South Hazel pool as Commercial Drilling Company's Cheparney 1, NE SW NE 35-7n-5e, had Cromwell sand at 3053 to 3083 feet. Earlsboro sand, pay for the pool, was absent in this test. Pipe is being run to test the Cromwell.

Wildcat Activity

New wildcats were staked and others drilling throughout the state. Oklahoma County had two starts seeking deep sand pay. Jones et al's Kramer 1, NEc 17-12n-1w, north of Nicoma park, was moving in materials. Another test to drill for buried Billings anticline was staked in Hall and Briscoe's Thompson 1, SWc NE 28-13n-1e, east of Jones. This location is on a block of 3000 acres with several major oil companies having acreage on the structure and adjoining. Several previous dry holes have been correlated to define the structure. Kerr-Lynn Oil Company set surface pipe at Belter 1, C SE 32-28n-10w, Alfalfa County, and was drilling. East of Sumner, Shell Oil Company and Wentz's Mosena 1, C SL SW NW SE 9-31n-2e, was drilling below 2600 feet, the test being in Noble County. Okfuskee County had a wildcat staked in Berry Brothers' Mount 1, NWc NE NE 1-13n-10e, southwest of Nuyaka. Back on the active list was Murray County as Kerr-Lynn Oil Company was completing a deal for Wolf 1, NWc SW 8-1n-2e, Davis pool. The spot was discovered last year at Gilbreath, Dutton et al's Wolf 1, SEc SW 8-1n-2e, completed for a gasser at 2367 feet but later made oil. A dry hole was drilled in the area in Comet Drilling Company et al's Tarby 1, C NE NE 17-1n-2e, bottomed at 2508 feet.

A set-back for Cleveland County was

hung up as Hall & Briscoe's Mantooth 1, NWc 24-6n-1e, east of Lexington, was abandoned at 6387 feet in second Wilcox sand. Northeast of Lexington, Sinclair-Prairie Oil Company's Ward 1, SEc 30-7n-1e, was drilling below 1100 feet. In the same county, J. F. Smith is attempting to revive an old well, Dixie Oil Company et al's Higbee 1, C SW NE 20-6n-1e, previously abandoned at 6761 feet in the Wilcox. Plans call for acidizing the upper Simpson, topped at 6410 feet.

Cement pool, Caddo County, was extended a quarter mile southwest as B. E. Johnson et al's Plummer 1, NEc SW 34-6n-10w, made an initial potential of 292 barrels from sand at 3345 to 3367 feet. Final testing is under way as pump was being installed. Offsetting this test to the west, Johnson et al have moved in on Block 16 but will await drilling until final completion of the above test.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Texas, Leurman 1, ne se sw 8-16-1w	457	2960
Carey, Perdue 1, swc nw 21-16s-11w	56	3351
Taylor, Kulthen 1, nwc sw 16-16s-12w	*	3373
Butler—		
Cox et al, Thompson 1, ne nw sw 2-24s-3e	Abnd.	Lcn.
Wixon, Meade 1, sec 30-24s-4e	*	2732
Elbar, Martin 1, ne se se 34-26s-7e	*	2735
Coffey—		
Dunne, Rossillon 6, nw sw sw 6-23s-15e	2	1560
Cowley—		
Hartman et al, Brown 1, sec nw 33-30s-4e	612	3286
Banrett et al, Waite 4, se sw sw 21-31s-4e	4169	3327
McKnabb, Moon 2, sec sw 16-32s-5e	746	3091
Douglas—		
Hays, Webster 5, se se sw nw 9-15s-20e	5	847
Ellis—		
Gulf, Mai 5, sec 14-11s-17w	3500	3394
Shell, Rumsey 19, ne nw ne 23-11s-17w	3500	3408
Nelson, Novak 1, nwc ne 36-13s-16w	*	3420
Grant—		
Panhandle Ea tern, Towler 1, c se 21-30s-37w	¶12	2703
Greenwood—		
York State, DeMolorie C-5-W, c nw 32-22s-11e	17	2011
Harvey—		
Western Kansas O&R, Moorehead 1, swc 24-23s-1w	*	3639
Johnson—		
Blauner, Jewett 1, se sec nw 15-14s-22e	25	840
O. K. Supply, Knabe 3, sw swc ne 15-14s-22e	10	827
Spearman et al, Bigelow 2, nw nec sw 15-14s-22e	8	838
Marion—		
Harwood, Kaufman 2, nec se 27-17s-4e	30	2399
McPherson—		
Ohio, Whitright 1, swc 30-19s-1w	111	2970
Rice—		
Jones, Habiger 1, nec sw 9-18s-10w	*	3295
Carey et al, Link 1, sw nw se 19-19s-9w	291	3291
Bridgeport, Peirce 1, ewl sw ne ne 29-20s-7w	*	3743
Phil-Han, Peterson 1, c w½ sw nw 4-20s-9w	448	3242
Russell—		
Stanolind, Krug "B" 1, ewl nw ne se 27-14s-14w	2231	2980
Polcyn, Polcyn 4, swc se 10-14s-15w	1787	3253
Coralena, Sellens 4, sec nw 17-15s-13w	2092	3200
Southern, Trapp 2, swc ne 29-15s-13w	28	3142
Cities Service, Tittle "D" 4, nw ne ne 14-15s-14w	761	3342
Stafford—		
Stanolind, Sittner 2, ne sw sw 3-22s-12w	399	3635
Sumner—		
Champlin, Love 7, sw nw sw 9-30s-2w	75	3217
Woodson—		
Aikeman et al, Weide 1, se nwc sw 1-24s-14e	7	1639

*Failures; †Junked; ¶Million cu. ft. gas.

Sinclair-Prairie Oil Company's German 1, SW NW NW 1-6n-13w, 4 miles northeast of Alden, was drilling below 4340 feet in shale.

Kiowa County's test west of the Hobart discovery, Shell Oil Company's Ratliff 1, SEc NE 19-7n-17w, drilled to 1220 feet in Viola lime without increasing the oil or gas show. Previously the well showed in an upper formation for 40 to 50 barrels. Pipe had been set at 1040 feet. Two miles northwest Lewis-Meyers Drilling Company et al's Ford 1, NEc SE 14-7n-18w, had a show of oil at 867 feet and a second show at 960 to 962 feet, and was drilling. H. Hagerling staked Boxman 1, SEc NE 14-5n-18w, in Roosvelt sector.

Roy Starr Oil & Gas Company abandoned State 1, NEc SW 13-29n-2w, northwest of Braman pool, Kay County, at 4075 feet in dry Arbuckle lime.

North of Ardmore, Pure Oil Company's Noble 1, C NE SE 35-3s-1e, pumped 102 barrels in 12 hours at plugback depth of 4462 feet, although having pump trouble.

Washita County's deep test, Continental Oil Company's Proctor 1, C NW 28-10n-20w, was drilling below 13,525 feet.

Shawnee pool, Pottawatomie County, has been defined on the southwest as Yorkan Production Company's Carlock 1, SEc NE 6-10n-4e, drilled to 4567 feet to be abandoned. H. G. Marshall's Rose 1, SW NE NE 6-10n-4e, made 25 barrels daily at 4473 feet as deepening to 4503 feet failed to increase the production. This test is on the west edge of the pool and will undoubtedly limit drilling in that direction. West of Konawa and 2½ miles east of Gray pool, Curtis staked a wildcat location in NW SW SW 28-6n-5e, near recent development in that area.

Kansas Field Developments

Six pools in five counties get production extensions.

General increase in wildcat drilling work is noted.

Wichita.—For the second consecutive week, field extensions had the major role in Kansas field activity over the past week. Six pools were extended, two in Barton County, one for Cowley, Stafford, Rice and Graham County. An increase in wildcatting was noted.

Silica pool, Rice County, was moved a half-mile northwestward as Skelly Oil Company's Bernstorf 1, C S½ SE SE 22-19-10w, flowed 198 barrels natural without acid. Arbuckle lime pay was topped at 3282 feet and drilled to 3294 feet. Operators will acidize before final completion. The test is on a 1100-acre block. A quarter-mile to the northeast same operators are building rig at Bernstorf 1, C S½ NW SW 23-19-10w. Stanolind Oil & Gas Company staked Lemke 3, C N½ NE SE 28-19-10w, as a west offset to the recently completed Finston's Hathaway 1, initial Lansing producer for Silica pool, earning a rating of 2436 barrels.

Prusa and Clawson pools, Barton County, were extended. B. B. and M. Petroleum Company's Esfield 1, NWc SE 28-16s-11w, ¾ mile southeast of Prusa pool, made a draw-down potential of 2750 barrels daily from Arbuckle lime at 3345 feet. A half mile west of Clawson pool, Frank Hollow et al's Schartz 1, SEc NW 18-20s-11w, filled 300 feet with oil in a short time when drilled to 3328 feet in Arbuckle lime, topped at 3296 feet. Skelly Oil Company staked Hickey 1, C SW 15-18s-15w, ½ mile east of Otis field.

Frog Hollow Extended North

Sinclair-Prairie Oil Company's Gardner "A" 1, SW NW SE 16-32-5e, extended Frog Hollow pool to the north, flowing 342 barrels in 32 hours from Bartlesville sand at 3905 feet. Potential is to be taken prior to completion. A wildcat failure for the county was Eason Oil Company et al's Muret 1, NE SE NE 35-33s-3e, southeast of production in Rainbow Bend pool. The test was abandoned at 3500 feet, finding Kansas City lime dry at 2796 feet. Phillips Petroleum Company has rotary rig at Glant 1, SEc NE 3-31-3e, ¾ mile north of Udall pool. Ben Gralapp et al's Clark 1, SE NE 11-31-3e, a mile northeast of the same pool, was rigging to drill deeper, old total depth being 3199 feet.

Misener sand production was extended ¼ mile to the northeast at Zenith pool in E. H. Moore et al's Stewart 1, C N½ SE SW 12-24s-11w. It flowed 59 barrels in 4 hours from the sand topped at 3732 and drilled to 3755 feet. After setting surface pipe operators were drilling ahead at E. H. Moore et al's Stewart 2, C S½ SE SW 12-24s-11w. A wildcat one mile from Sittner pool and ¾ mile northwest Mueller pool gave promise of making a producer. Murphy and Virginia Drilling Company's Teiperman 1, NEc SW 29-21s-12w, cored saturated Arbuckle lime from 3613 to 3617 feet, topped at 3610 feet. Drilling proceeded to 3618 feet, showing oil saturation.

Continental Oil Company was testing at Clarke 1, SWc 10-9s-21w, with 1500 feet of oil in the hole. A small show of oil in Arbuckle lime failed to respond and operators plugged back to 3690 feet and acidized to get the fill-up. This extends production in Morel pool northward.

A quarter mile west of Graber pool, McPherson County, W. C. McBride et al's Heintbleman 1, SEc 30-21-1w, had saturation in Hunton lime topped at 3293 feet and casing was run to test the show. A wildcat for the county was drilling in Fain Drilling Company et al's John 1, CWL NE 31-20-5w, 11 miles north Barnholdt area. Two locations from the pool, Bradley Brothers

have started Johnson 1, CWL NE 31-20-5w.

Rice County had four wildcats under way. Okan Drilling Company et al's Shonyo 1, SW NE 34-18-9w, ¾ mile east of Ploog pool, had moved in derrick. Near Stumps pool, Vickers Petroleum Company had moved in rotary to drill Radenburg 1, CNL NW 8-18-10w. Garner et al's Browning 1, CEL NE NW 7-19-9w, one mile south of Haferman pool, was drilling after setting surface pipe. East of Galt area, Continental Oil Company staked location for Ferguson 2, SWc NE NE 8-18-7w.

A Hall pool outpost, Russell County, was a disappointment as Stanolind Oil & Gas Company's Michel 1, C N½ NE NW 1-15-15w, southwest of the pool, found dry Arbuckle lime at 3228 feet and abandoned at 3235 feet. A half mile northeast of Coralena pool, one of the most active in Russell County, Gulf Oil Corporation staked Rain 1, C S½ SW NE 8-15-13w.

Jackson County, Northeastern Kansas, has a test in Haun's Ernst 1, NW SW 6-8-16e, southeast of Holton. Earl Wakefield et al staked Berridge 1, NW SW 8-9-17e, north of Rock Creek village, Jefferson County, the Forest City Basin play influencing its importance. H. B. Synder et al moved a machine for Feeler 1, SW NW 27-15-20e, south of Baldwin City pool, Douglas County, and is the first test in many weeks for the county. South of Pomona gas pool, Reed, Gardner et al have a test in Schinn 1, in 11-17-17e.

Bradley, Parks et al's Fisher 1, NEc NE 25-26s-1e, two miles south of Kechi, Sedgwick County, was a wildcat start. Between North Vernon and Padgett pools, Palmer Oil Corporation was drilling at Lawson 1, SW SE 9-35-2e.

Reno contributed a wildcat failure in Westgate-Greenland et al's Swanson 1, CNL NW 1-23s-5w, one mile south of Buhler pool. It only had a slight show of oil with salt water in Wilcox sand at 3967 feet.

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Adams County—		
Tira Syndicate, Tira 1	*	2165
Athens County—		
A. J. Looley, Marshall 1	¶.07	1427
Cuyahoga County—		
Benedum-Trees, Killaran 1	¶3.20	2813
Fairfield County—		
Strum et al, Mussar 1	*	665
Guernsey County—		
Dr. Hartman, Swigert 5	*	1292
Knox County—		
Preston Oil Co., Jones 2	83	3130
H. E. Perkins, R. Hunter 1	¶.05	2870
Lawrence County—		
Ohio Fuel Gas Co., Jenkins 1	¶.30	2997
Licking County—		
Willey et al, VanWey 3	¶3.40	2775
Lorain County—		
McFrederick, T. A. Day 1	60	2246
Ohio Fuel Gas Co., Prudential 1	¶.22	2267
Medina County—		
N. Y. O. Oil Co., T. Brown 21	25	400
Dymo Oil Co., Ripley 0-21	I	322
H. L. Pearsall, White 7	*	484
Monroe County—		
Lucas & Thornberry, Hanson 6	'	2005
Noble County—		
Skinner & Co., Dixon 1	*	1100
Mud Run Oil Co., Bates 1	*	1444
Perry County—		
Preston Oil Co., Harlin 1	¶.40	2980
Stark County—		
C. W. White et al, Werstler 1	¶.50	4587
Washington County—		
E. W. Cline, Coal Lands 19	5	1630
H. F. McTaggart, Ermine 1	¶.05	1805
C. E. Uhl, Huffman 9	'	1637

"I" indicates intake well.

*Failures; †Junked; ¶Million cu. ft. gas.

Illinois Developments

Shelby County wildcat testing 10 feet Benoist saturation. 800-barrel flow raises standing of Tonti, Marion County.

Mattoon, Ill.—Kingwood Oil Company and Wiser's Howe 1, SE SE SE 7-10n-6e, Clarksburg Township, Shelby County, was cleaning out after drilling plug to 10 feet of Benoist sand saturation below 1769 feet. The wildcat, 8 miles from the only (small) producer in the county, had been drilled to 2454 feet. It topped the Benoist at 1750 feet, and is in the center of a large block held by Carter Oil Company.

In the south part of the basin, Kingwood Oil Company resumed drilling Tullis 1, C E NE NE 29-3s-8e, Mill Shoals Township, White County, after being tied up for part of the week with a fishing job. It was at 3423 feet at last report. The company's Egyptian Tie & Lumber Company 1, C S½ NW NE 15-8s-10e, New Haven Township, Gallatin County, was drilling at 2570 feet; while its Johnson 1, SE SE NE 18-3s-11e, Edwards County, was at 2500 feet. All are rank wildcats.

C. D. Neff's A. P. Bump 1, NW NE NW 9-2s-13w, Keensburg Township, ½ mile north of Keensburg, Wabash County, 3 miles from nearest production in the Griffin pool, promised a 500-barrel Cypress sand well on the basis of core analysis. Sixteen feet of saturation was topped at 2403 feet, and casing was set. Plug was to be drilled over the week end. With an elevation of 418 feet at surface, the test topped the Glen Dean at 2152 feet. Besides Neff, those interested in the test include L. H. Choate and Dr. W. R. Choate, of Midland, Texas, and Burr Lambert.

Impetus to development of the recently-opened Tonti pool of Marion County was given with completion last week of Arthur "Tex" Harvey's Kagy (Salem State Bank) 3A, SW SE SE 33-3n-2e, Tonti Township, which flowed 800 barrels through casing in 24 hours. The southernmost well in the pool, which now numbers 7 wells, it compares with earlier wells that made from 75 to 150 barrels daily and all of which had water trouble. Production is from the McClosky lime.

In the deep Sandoval pool of Marion County, Baldwin et al's Schaffnit 1, W½ NE 4-2n-1e, the east outpost, shut down for orders at 2900 feet while decision was being made whether to drill into the Niagaran with cable or rotary tools. Max Pray's Robinson 1, SW SE SW 4-2n-1e, was fishing for tools at 2280 feet; Max Pray's Langenfeld 1, SW SW NW 4-2n-1e, was being plugged back from the Niagaran preparatory to perforating casing to test a 5-foot saturated section at 2200 feet and a 10-foot section at 2400 feet; and Menhall et al's Benoist 2, SE NE NW 8-2n-1e, was drilling below 2300 feet. This pool, currently the only Illinois area producing from the deep Niagaran lime, has two good wells.

W. B. Dallas' Flanigan 1, SE NW SW 30-2n-2e, west outpost to the Lake Centralia-Salem pool, set casing to the top of the McClosky. The week's largest completion in this pool was Magnolia Petroleum Company's Sam Shanafelt 17, Section 20-2n-2e, which flowed 4416 barrels from the McClosky in 24 hours. Bottom is at 2065 feet. A week ago, this operator's J. R. Young 9 was completed for a 6115-barrel initial after treatment with 2000 gallons of acid to make it the second largest well in the state.

Roads Own Mineral Rights

In the first court test on the validity of roadway leases, Circuit Judge Morris Joyce at Nashville, Washington County, last week dissolved a temporary injunction which restrained Lilly and associates from completing two wells on the Kozuszek strip and on the Biela-

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Christian County—		
Klerbolker & Heldt, Smith 1	*	1185
Clark County—		
Patmin et al, Drake 2	*	1472
Clay County—		
Centralia Ref. Co., Weiler School 1	200	3025
Pure, Weiler 9	62	3051
Clay City Banking Co. 2A	987	3118
Clay City Banking Co. 3	511	3115
Sol Smith 1B	3041	3095
Sol Smith 2B	623	3091
Leon Clark 8	816	3090
Dick Burnett, Cyrus Liggett 1	*	2445
Riley et al, Smith 1	*	2340
Minerva Oil Co., John Smith 1	*	2474
Coles County—		
Marvin et al, J. H. Bell 1	*	2318
Fayette County—		
Griffert Drilling Co., Garver 1	*	1615
Carter Oil Co., Eagleton 2	24	1551
M. Cummings 2	58	1500
J. B. Drees 3	102	1485
Lizzie Fichteman 1	311	1512
M. Williams 2	455	1583
George Bauer 1	900	1590
Jack Dial 1	328	1597
Mary Dial 2	108	1555
Marion Finch 1	35	1600
John Williams 3	298	1573
L. Ripley 7	113	1568
Lewis Ripley 8	136	1573
Phyllis Reece 7	380	1551
M. J. Griffith 7	184	1553
M. J. Griffith 8	360	1553
M. J. Griffith 9	302	1574
Richard Larimore 11	266	1592
Geral Miller 1	100	1583
Geral Miller 2	150	1549
John Sloan 2	90	1601
O. C. Wood 2	216	1600
Harley Stead 2	642	1540
Henry Kline 3	636	1535
Texas Co., M. Griffith 2	182	1557
Patterson 2	65	1560
Schuman, Combe 2	250	1578
Shulman Bros., Combe 3	350	1565
Shulman et al, Combe 4	300	1665
Ohio, Rush 2	182	1557
Rush 3	185	1553
Scott et al, Swarm Roadway 1	*	800
Hughes Producers, Stinebring 2	*	1867
Nash Redwine et al, Logue 1	130	1554
Stewart Oil Co., McPheeters 4	35	1585
McPheeters 5	70	1589
Jarvis Bros., Homan 10B	150	1588
Homan 11B	5	1583
Homan 2B	D	863
Homan 1B	D	850
R. W. Burnett, Forster 1	100	1590
Gallatin County—		
J. G. Buell, Egyptian Lbr. Co. 1	*	2960
McCarter, Logan 1	*	1818
Jefferson County—		
Carter Oil Co., Carl Hall 3	94	1952
Lawrence County—		
Joe Young, Bierhaus 3	¶24.10	1090
Madison County—		
Lambert et al, Brookmyer 1	*	1394
Dr. E. L. Loper, F. Keller 1	*	1368

towiez strip in Section 23-3s-3w of the Cordes pool. The restrainer had been obtained by Ohio Oil Company several months ago, the company contending that the strips had been dedicated for roadway purposes only. The court held that the roadway owners were entitled to mineral rights.

Lilly et al drilled in Pinsky 1, which had been taken to the Benoist before the restraining order had been issued, and it was an estimated 30- to 40-barrel producer. In this county, M. B. Armer et al's wildcat in Section 33-3s-1w, ½ mile from DuBois, had a faint trace of oil on coring the Benoist.

Materials were being moved in for J. Curtis Starr's Shoemaker 1, C SE NW 21-9s-4e, Williamson County, east of Crab Orchard and near state highway 13. Paul Doran has the contract for a 2800-foot test. The wildcat is in the midst of blocks held by Super Oil Company and the Carter Oil Company.

J. W. Pearson et al's (T. C. Chisum) T. E. Boultinghouse 1, SW SW 10-4s-14w, Phillips Township, a wildcat, set casing and cemented to 13 feet of good Cypress sand saturation at about 2600 feet. Offsetting it to the west, R. E. Johnson's F. M. Hon, NE NE SE 9-4s-14w, was moving in rotary. Superior Oil Company's S. Stum 1, C SW SW 15-5s-14w, Hawthorne Township, was abandoned at 3040 feet with no commercial showing in the McClosky.

Approximately 5 miles east of production in the Lake Centralia-Salem pool, Booten, Smith & Lundly's John Vursell 1, Section 31-2n-3e, Stevenson Township, 4½ miles southeast of Salem, was spudded.

Plugs were drilled at Carter Oil Company's Carl Hall 4, Section 4-1s-2e, northwest outpost to the Dix pool of Jefferson County, which now numbers 47 producers. It was being shot in the Benoist sand. Successful completion of this well would force an offset across the Marion County line, and possibly supply that county with its sixth oil pool in the current development campaign.

In Jefferson County, Shell Oil Company's Jefferson Oil & Gas Company 1, C NE NE SW 32-3s-2e, was abandoned at 2904 feet without a commercial showing at any level.

Company, Well and Location	Init. Prod. Bbls.	Depth
Marion County—		
Bell Oil Co., Albert 1	20	2105
Texas Co., City of Centralia 31	154	1853
B. Hawkins 15	504	1947
B. Hawkins 16	686	1949
B. Hawkins 17	1757	1963
B. Hawkins 18	560	1975
B. Hawkins 19	175	1862
O. Johnson 16	896	1962
O. Johnson 19	84	1850
C. E. Richardson 5B	490	1810
C. E. Richardson 7A	125	1946
J. O. Richardson 7	301	1950
H. Small 12	287	1787
O. Johnson 18	399	1745
C. Richardson 2A	203	1824
R. Murray 1	217	1877
W. Friedrich 8B	238	1840
J. Fyke 3	224	1923
R. Fyke 11	189	2059
B. Hawkins Community 4	1036	2060
E. L. Snider 7	217	1901
E. Jett 18	135	2060
E. Jett 19	56	1872
R. Shanafelt 9	1134	2017
O. F. Telford 4	3000	2049
L. Dunning 5	2191	1767
Dempsey Roadway 1A	168	1781
Dempsey 7	*	2026
Ohio Oil Co., R. L. Murray 9	150	1899
R. L. Murray 10	100	1891
Rock Hill Oil Co., Foster 16	600	2092
Menhall et al, Benoist 1	1654	2924
Magnolia Petroleum Co., W. O. Chitwood 29	855	2100
W. O. Chitwood 30	354	2105
C. D. Phillips 5	672	2100
Potter Bros., M. & I. R.R. 8A	900	2095
M. & I. R.R. 9A	350	2100
Sheppard, Greer 4	200	2149
I. D. Laine, Dempsey 4	*	1980
Dempsey 6	225	1803
Monroe County—		
Crittendon & Noelkemper, Schroeder 1	*	533
Moultrie County—		
Seaboard Oil Co., Doy Horn 1	*	3262
Richland County—		
Mabee Drilling Co., Sparr 6	52	2602
St. Clair County—		
Algona Petroleum Co., Muehler 1	*	2252
Blosser et al, Eckert 1	50	738
Hempen et al, Thielman 2	50	708
Williams et al, Columbia Quarry 1	*	837
Washington County—		
Harry Harter, Geo. Flauaus 1	*	1355
Magnolia, Barney Liszewski 1	22	1304
Emma McConnell 1	72	1276
J. Nowak 2	32	1270
Manitou Pet. Co., Kurwicki 3	77	1300
Wayne County—		
Pure Oil Co., Effie Brown 2	31	3161
Victor L. Lane 1	347	3175
E. A. Keith 2A	175	3135
J. E. Fitch 1	281	3160
Ruel E. Fitch 1	49	3160
F. M. Trotter 2	38	3135
Oil Well Dr. Co., McPherson 2	1200	3253
New Pennsylvania Dev. Co., Baker 1	*	3373

"D" indicates salt water disposal well.
*Failures; †Junked; ¶Million cu. ft. gas.

Indiana Activities

Gibson County test has saturation in Hardinsburg

Evansville, Ind.—Karl Michel and C. M. Lane's William Carrithers 1, NE SE SE 26-1s-10w, Center Township, Gibson County, was cleaning out after shot in the Hardinsburg sand, where 2 feet of saturation was topped at 1345 feet. The wildcat is 5 miles northwest of the old Oakland City pool.

Also in Gibson County, Al Walker and Bruce Martin's Oscar Schmidt 1-A, SE SE SW 13-3s-9w, Barton Township, has apparently minimized water trouble and pumped at the rate of 70 barrels an hour last week. Production is from the Pottsville, topped at 951 feet, and bottom is at 961 feet. Materials were being moved in for L. Kohlmeier 1, SW SW NW 18-3s-8w, Barton Township, 1 mile to the north and east. Pete Thorp and J. K. Cleary's John P. Ballard 1, NE NE SE 18-2s-10w, Patoka Township, ½ mile southeast of Princeton, Gibson County, was spudded last week, and W. F. Armstrong's Will Blair 1, NE NE SW 8-2s-11w, Patoka Township, was announced as a location.

Midway between the principal producing area of the Griffin pool of Gibson County, and the producing W. F. Lacy's George Heston 1, 2 miles east of Griffin pool production, Gwin Drilling Company's William Skiles 1, NW SW NE 18-3s-13w, Wabash Township, was shut down at 2389 feet with drill pipe stuck in the hole. Offsetting the Heston 1 to the west, Tide Water Associated Oil Company's M. P. Kelly 1, SE SE NW 8-2s-13w, was setting surface casing. On a 1-acre tract on the Wabash River, Lon Huddleston's George Jolley et al 1, W½ NW NW 18-3s-13w, cored 20 feet of good Cypress sand saturation; Burr Lambert's E. L. Kries 1, C W½ NW NE 8-3s-13w, started drilling; and Lewis Production Company's Cooper-Housman B-1, SE NE SE 12-3s-14w, set casing to 15 feet of Cypress sand saturation after plugging back from the McClosky.

Superior Oil Company's New Harmony Realty 3, Section 10-5s-14w, Harmony Township, Posey County, failed to get a show in the Waltersburg sand, where the Nos. 1 and 2 were completed as good producers, and was drilling at 2700 feet. This company's New Harmony Realty 4 was drilling below surface pipe.

Damron Bros.' (F. L. Damron et al's) Effie Miller 1, NE NE NE 2-8s-7w, Luce Township, Spencer County, was making 60 barrels a day under pinched production. It is believed to be the state's first Aux Vases sand production. Bottom is at 1510 feet. In Bethel Township, near the Gibson County line, Sommers & Egan, drilling contractors, were moving in materials for W. T. Mellow's Keck 1, NE NE NE 34-2s-14w.

Kentucky Natural Gas Company's Axton 1, NW NE NE 30-7s-6w, Ohio Township, Spencer County, encountered a good show of gas in the Waltersburg sand at 882 feet. In the same township, George Randolph's P. H. Axton 1, NE NW 30-7s-6w, was without a show of gas in the Waltersburg but had a small oil show in the Barlow. It was drilling ahead to the McClosky. Sunshine Oil & Gas Company's J. D. Trent 1, SW SE 11-5s-6w, Grass Township, west of Chrisney, was spudded.

Indiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
John Andrews, Wiesman 1	*	1334
Gibson County—		
J. B. Bond, Dunn	*	2555
Hancock County—		
J. H. Snider, Listher 1	¶	968
Posey County—		
Superior Oil Co., New Harmony 2	500	2214
Sun Oil Co., Heil 2	20	1891
L. R. Henley, Schmidt 1	*	1167
Spencer County—		
H. C. Hume, Stewart 1	*	1220
Damron Bros., Miller 1	100	1510
Vandenburg County—		
H. J. Baker, Peters 1	*	....
Vigo County—		
Vandenbark & Whitaker, Stirwalt 1	*	2996

*Failures; †Junked; ¶Million cu. ft. gas.

Kentucky Fields

McLean County wildcat to test McClosky show

Owensboro, Ky.—H. H. Schwartz' Traylor-Frissee 1, 3 miles southwest of Beech Grove, McLean County, completed reaming out a core-machine hole and set casing to the top of the McClosky lime, where 4 feet of saturation was topped at 1231 feet (corrected). A rank wildcat, its successful completion would spur activity in McLean and Webster counties. Surrounding acreage is held by Tide Water Associated Oil Company and Sun Oil Company.

This wildcat, at an elevation of 385 feet, topped the Vienna limestone at 497 feet; the Tar Springs or Jett sand at 511 feet with four slight shows between 526 and 600 feet; Glen Dean at 633 feet; Hardinsburg at 661 feet with a slight show between 682 and 687 feet; Golconda at 727 feet; Barlow at 856 feet; Paint Creek at 899 feet; Bethel at 932 feet with a faint show from 950 to 959 feet; Renault at 973 feet; Ste. Genevieve at 1055 feet, and McClosky at 1231 feet. Bottom was at 1235 feet.

Materials were being moved onto location for R. A. Tombs and H. C. Smith's O. H. Parker 1, across the Green River from the Traylor-Frissee wildcat and in Webster County.

After failing to get a show in the McClosky, Hart & Hart's W. M. Nantz 1, near Maceo, Daviess County, was plugging back for a test of the Jett sand at 800 feet. Saturation believed sufficient to make a light well had been drilled through in the Jett by this wildcat.

The Jackson sand, which in most western Kentucky tests has failed to show oil saturation, being chiefly a gas producer, furnished a 20-barrel pumping well in Jack Cox's L. R. Waitman 1, 3 miles east of Maceo, Hancock County. About 28 feet of saturation was topped at 900 feet, and the well has been shot with nitroglycerine.

Near the fork of the Ohio and Greene Rivers in Henderson County, efforts were being made to complete W. H. Parks et al's O. Letcher 1, in the Scuffletown section, in the Aux Vases after plugging back from the McClosky lime. Northwest 1½ miles of that wildcat, Paul Luhring et al's Laura Lacke 1, Henderson County, was spudded as a cable-tool test; while L. J. Palmer was moving in materials for the O. Letcher 2.

Imperial Oil & Gas Products Company was preparing to spud Sam Bunch 1, in the Cash Creek community of Henderson County. To be a cable-tool test, it is near Freeman 1, the first McClosky lime test drilled in Henderson County, which is still producing 8 barrels daily from 2170 feet. The tract is now owned by Ernest Reid and B. H. Phillips.

More information on the potentialities of the Spottsville pool of Henderson County should be revealed with completion of Ralston & Sales' Annie Stewart 2, near Spottsville, which was drilling below surface pipe last week. Some distance from producing wells on the Greene farm, it is 50 feet west of Annie Stewart 1, started early in the year and abandoned a week ago on failure to recover lost tools at 2100 feet.

In Hopkins County, Carter Oil Company and Phillips Petroleum Company's B. H. Parker 1, near Hanson, was drilling at 5200 feet; while Jess Ashby's John Paige 1, near Morton's Gap, was drilling at 700 feet.

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
Cumerland Pet. Co., R. Ward 1..	10	380
Daviess County—		
Chenault & Farmer, G. A. Nation 2	75	1401
C. E. Daugherty & J. C. Ellis, O'Flynn 6	50	1169
Stewart & Snyder, Roy Hansford..	*	400
Callas, C. W. Westerfield 2.....	*	938
Kentucky-Missouri Oil Co., Boswell 2	*	1310
Hancock County—		
Cumberland Pet. Co., Snyder 5.....	*	675
Apell et al, Richards 1.....	*	634
Hopkins County—		
Minton, Lacey & Tomberlin, Whitzell 1	*	2993
Lee County—		
W. M. Wiseman, Moore 10.....	2	....
Muhlenberg County—		
Joe Blaylock, DeArmon 1.....	10	416
Ohio County—		
A. Teller, Holland 3.....	5	1028
Ohio Oil Co., Kirk 25.....	*	425
Stewart et al, West 3.....	*	....
Mary Ann White West 4.....	*	....
Powell County—		
Lyle & Kinser, Kinser 1..	5	900
Leslie Jones, Townsend 1.....	5	950

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
Pond Fork Oil & Gas Co., Fee 3..¶2.55		2700
Braxton County—		
Pittsburgh & W. Va. Gas Co., Nottingham 7682	*	1944
G. B. Howell 7679	*	2282
Cabel County—		
C. T. Teubert, Fee 2 ..... ¶.02		246
Calhoun County—		
Hamilton & Coleman, Cunningham 1	5	2257
W. V. Knight, Bell 1 ..... ¶.10		2005
Gilmer County—		
Elliott & Cain, Williams 1..... ¶.06		1852
Logan County—		
Boone County Coal Corp., Fee 14.. ¶.27		3194
Ritchie County—		
Dye Farm Oil Co., Dye 4.....	5	1921
A. R. Kelly, Ingram 1..... ¶.50		1395
Lucas & Mahaney, Taylor 1.....¶.18		2040
Wood County—		
Tri-County Prod. Co., Richards 1...	*	1415

*Failures; †Junked; ¶Million cu. ft. gas.

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
J. A. Bucher, Hamsher farm, Bolivar	4	1256
Forest Oil Co., Ackerman farm, Bolivar	8	1436
H. N. & W. E. Sawyer, Thomas farm, Bolivar	4	1370
Ebenezer Oil Co., Vincent farm, Scio	7	1080
Emerson farm, Scio	8	1047
Custer Oil Co., Whitcomb farm, Scio	5	1202
Whitcomb farm, Scio	6	1195
Harder-Bradley Oil Co., Clare-Rhodes farm, Alma	6	1279
H. W. Patterson et al, B. S. Clark farm, Scio	6	970
B. S. Clark farm, Scio	5	963
Allegany: Water Intake Wells		
Forest Oil Co., Ackerman farm, Bolivar	..	1432
Bohne Bros., Matena farm, Willing	..	1258
Ada M. Gray, Smith & Gray farm, Genesee	..	1386
Messer Oil Corp., Dunning farm, Genesee	..	1392
Jacob Trinkle Est., Hill Est. farm Genesee	..	1378
Steuben County—		
Rehler et al's Foster Estate 1.....	*	3934
G. L. Cabot, Inc., Lydia Owens 1. C. Owens 1	*	4128 4262

Pennsylvania Completions

BRADFORD DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
C. M. Lippert et al, Lippert	1	....
Mix Creek Oil Co.	1	....
Messer Oil Corp., Redfield.....	4	....
Grant & Mohan Oil Co., No. 2, Moody	1	....
Lloyd & Hardy, Meehan.....	2	....
Smith Newton Oil Co., Lincoln.....	1	....
T. H. Kervin, Jr., Adams.....	1	....
Forest Oil Corp., 3 wells.....	3	....
Forest Petroleum Corp., 4 wells....	4	....
Niagara Oil Corp., 7 wells.....	7	....
Bradford Transit Co., 11 wells.....	11	....
Bradford (Water Intake Wells)—		
Grant & Mohan Oil Co., No. 3, Bing 484-5-6-7	..	....
George Van Vechten & Son, Farr..	..	....
Forest Oil Corp., 2 wells.....	..	....
Niagara Oil Corp., 2 wells.....	..	....
Butler-Armstrong District—		
Frederick & Co., Max Luthner.....	1	....
Middle District—		
I. Dana Kahle, J. M. Nickle.....	½	....
Warren Bank & Trust Co., Churchill	½	....
J. H. Lester, Loomis.....	*	....
A. V. Clinger, Payden.....	*	....
New York-Pennsylvania (Gas field)—		
Cunningham Natural Gas Co., F. Markey	¶	....
New York State Natural Gas Co., Ladd Estate	¶	....
Allegheny County—		
Oliver Miller, Wm. McNeal 1.....	¶	2800
Robert Marshall, J. Rittman 2....	35	1800
Armstrong County—		
Galbraith Drlg. Co., J. Gallagher 1	*	1515
Watson et al, J. Harkleroad 1....¶1.25		3668
Indiana County—		
T. W. Phillips Gas & Oil Co., T. Steffey 1 .....¶.13		....
R. R. & P. Coal Co. 2.....	*	3127
T. W. Phillips Gas & Oil Co., B. R. & P. Coal Co. 1.....¶.10		3158
H. B. Debendorfer 1.....	*	1496
Dr. Meham et al, Dr. Meham 1.....	*	3559
Potter County —		
Empire Prod. Co., E. D. Plants 1..¶18.00		4966
Washington County—		
Harry Williams & Co., J. Buchanan 3	1	1345
Shivers & Co., M. Prigg 1.....¶1.20		2682

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Wildcat)—		
Wm. Hanagan-Richmond Drl. Co., University-Stanolind 1	*	5005
Crockett County (Crockett)—		
Gilcrease Oil Co., University-Humble 7-13	92	1515
Dickens County (Wildcat)—		
Humble, Matador 1	*	7053
Ector County (Foster)—		
Arrow Drl. Co.-York & Harper, Foster 10	928	4300
Ector County (Goldsmith)—		
Cities Service Oil Co., Cummins 8-C	368	4275
Gulf, Goldsmith 203	704	4217
Goldsmith 204	2197	4207
Goldsmith 205	1725	4213
Glasscock County (Wildcat)—		
Shell Oil Co., A. D. Neal 1.....	*	3683
Jones County—		
Bourne & Bradstreet, Richardson 2	2496	3260
Fain-McGaha Oil Corp., Shaheen 6	520	1894
Fain-McGaha & Sinclair Prairie, Swedish Church	1976	3237
Guitar Trust Est., Fee 12	297	2146
Iron Mt. Oil Co.-Humble, Davis 4 ..	4000	3253
Peckham et al, Brock 5	300	1887
Sandy Ridge Oil Corp., Alton-Magnolia 1	257	1903
Sprouls et al, Nichols 1-a	49	1880
Jones County (Wildcats)—		
Gillespie et al, J. D. Samples 1...	*	3505
Kittery Oil Co. (was J. L. Douglas) Blanton 1	53	1632
Phillips, Montgomery 1	*	2622
Roark et al, Southard 1	*	2375
Roberts Co. et al, Chas. Herndon 1	*	2602
Loving County (Mason)—		
Michigan O&G Co., Kyle 8.....	248	3925
Pecos County (Payton)—		
Cities Service, Dorr 3	365	2075
Pecos County (Pecos Valley)—		
Mid-Continent, Jasper Co. Realty 7	193	1650
Pecos County (Tobarg)—		
Marvin-Henderson Oil Corp., Tippett-Conoco 3-C	20	514
Pecos County (Wildcat)—		
J. L. Greene-L. Goodman, Masterson-Humble 1	*	1526
Scurry County (Sharon)—		
Callahan et al, First Nat'l Bank (Snyder) 2	109	2558
Wheeler et al, Sims 1	182	2505
Upton County (McCamey)—		
T. P. Coal & Oil Co., Lane 36-A..	254	2110
Ward County—		
Gulf, Hutchings 126	963	2781
Prince Bros. et al, Durgin-Standard 1	30	2530
Sinclair Prairie, Archenhold 16....	514	3070
Roeser-Pendleton, Inc., Johnson 2-8	*	3200
Winkler County (Keystone)—		
A. G. Carter et al, Walton-Pure 8	180	3476
Gulf, Keystone 32	461	3383
Standard of Texas, Baird 13-65....	268	3400
Yoakum County (Bennett)—		
Magnolia, Bennett 7	1262	5241
T. P. Coal & Oil Co., Bennett 21..	2110	5230
Yoakum County (Wasson)—		
Aloco Oil Co., Jordan-Saltmount 1	878	5200
J. W. Murchison et al, Elliott-Standard 8-B	656	5090
Osage Drl. Co., C. A. Hudson-Shell 1	396	5117
J. H. Lynn-Shell 1	528	5226
T. P. Coal & Oil Co., Cecil-Bloomer 1-A	1264	5115

West Central Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Callahan County—		
Hagerty et al, Weddington 1, sec 4	*	480
Wittmer et al, Jackson 1	*	1266
Callahan County (Wildcat)—		
Henderson et al, Toland 1, sec 27	*	1190
Comanche County—		
St. John & Choate, Smith 1	52	628
Whitesides et al, Anderson 1.....	*	622
Eastland County (Wildcat)—		
Aloco Oil Co., Guy 1	*	1601
W. J. Dobbs Oil Corp., Greer 1....	75	3131
Shackelford County—		
Cady & Edwards, Hickman 2....	5	420
Fortex Oil Co., Lee 1.....	*	1225
J. G. Hammond et al, McKeever 1..1320		3212

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
L. R. Hagy-Harrington-Marsh, Gordzelik 1 .....¶28.2		2780
J. H. Osborne 1.....¶27.3		3027
Northern Oil Co., E. Cooper 6.....	691	3157
Gray County—		
Gulf, Faulkner 16-A	220	3007
Yealy et al, W. C. Archer 3.....	87	3280
Hutchinson County—		
J. E. Crosbie, Pitts 32.....	540	2955
Phillips, Cockrell 42	363	3062
Stanolind Terry 16	352	3016

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Cedar Lake wildcat is running high on structure.

Test will shorten gap between Bennett and Wasson.

Midland, Texas.—A double check on the structural relief afforded by the Cedar Lake prospect, northwestern Gaines County, was provided when Stanolind Oil & Gas Company's Rayner 1, C SW SW PSL Section 3, Block C-30, logged top of Yates at 2700 feet, with an elevation of 3066 feet. Drilling was halted after gas appeared at 2710-14 feet to cement a 9⅝-inch protection string at 2697 feet.

Rated as the most important wildcat in the Permian Basin, the Cedar Lake test confirmed supporting geophysical data by checking 341 feet higher on the Yates marker than Doak 1, a failure 5⅓ miles west by north. It is 135 feet higher than Scanlan 1, an abandoned pumper situated about the same distance northeast in Dawson County. The Cedar Lake block was acquired prior to this outlying development.

The interval of unexplored territory between Bennett and Wasson fields, Yoakum County, is due to be shortened as result of a ½-mile south extension being assured for the former. Mid-Continent Petroleum Corporation's Comer 1, NE NW NE Section 760, logged top of solid lime at 4515 feet, or 22 feet higher than nearest producer, and was drilling at 4680 feet. Aloco Oil Company's Bennett-Texaco 1-B, west edge test, is installing equipment to become the third pumper for the Bennett area, having failed to make a flowing well at 5260 feet.

Drilling time in the active Wasson field is being reduced as contractors' crews add to their experience. Aloco Oil Company's McGinty-Texaco 1 was placed on production at 5195 feet, flowing 20 barrels hourly through tubing, within an elapsed period of 26 days. This company has 12 tests drilling and in process of completion.

William Hudson and Charles Million's Webb 1, two miles northeast of Bohago pool, Yoakum County, was ordered plugged after fulfilling depth contract at 5500 feet.

Additional acreage was proved on the northwest flank of Sharon pool, Scurry County, through the completion of J. B. Stoddard et al's McClure 1, SE SE NE H&TC Section 142, Block 97, rated as a 139-barrel pumper after 1152-quart nitro shot at 2252-2492 feet. Unusually large nitro shots are becoming commonplace in this area.

An Ordovician test for northwest Pecos County is being contemplated by Benedum-Trees interests, according to reports. The proposed site is southeast of Netterville pool, and the drilling block will include a portion of the large ranch owned by Joe C. Trees.

Deep mineral rights were retained by Humble Oil & Refining Company along with ⅛ over-riding royalty in assigning its University 80-acre lease, W½ NW Section 13, Block 18, Taylor-Link field, Pecos County, to D. Breeding and associates for $20,000. The lease has a small pumper in the 1680-foot lime.

Ordovician prospecting in northern Pecos County provided an unusual geological condition when Magnolia Petroleum Company's Eaton-Abell 2, east corner of H&TC Section 23, Block 3, passed from the Permian into the Ellenberger section at 5115 feet, with an elevation of 2424 feet. The Ellenberger proved non-porous and hard in drilling to 5150 feet. This test is 6½ miles southwest of the company's McKee 1-A, which logged 1327 feet of Simpson, topped at 4775 feet, with an elevation of 2385 feet, and quit in Ellenberger at 6102-6267 feet.

The Texas Company's University 4-D, near SE NE NE Section 13, Block 35, Crane County section of the Jordan pool, flowed 198 barrels of oil natural through casing in 3 hours from lime at 3548-50 feet, then averaged 79 barrels hourly on 9-hour gauge. Tubing will be run to complete. Gulf Oil Corporation's McKnight 5, northwest outpost for McKnight pool, Crane County, cemented 8⅝-inch pipe at 4200 feet, and was drilling at 4236 feet.

Harold Opp et al's Jackson 1, NW NE Section 41, Block LL, T. C. Ry. Survey, Schleicher County wildcat that has been showing for a small oil producer the past month, logged more saturation in deepening to 4081 feet, with an elevation of 2353 feet. The test was scheduled to be treated with 1000 gallons of acid late last week after showing for a 25-barrel well.

New Callahan County pool near recent deeper failure

Abilene, Texas. — Callahan County gained a new shallow pool on the strength of a followup test near a deep failure that passed up sands showing oil. L. A. Warren et al's R. D. Williams 1, C. S. Alvord Survey, 1½ miles northwest of Putnam, pumped 14 barrels of 37-gravity oil initial from sand at 589-96 feet that was logged by Wittmer Oil & Gas Properties' Williams 1, a recent 2112-foot failure. The latter retained its drilling block, except for a 40-acre site given Warren et al, who discovered the Cozart shallow pool, near Scranton, Callahan County, early this year through information gained from Phillips Petroleum Company's 4140-foot Ellenberger failure.

Wittmer Oil & Gas Properties, Knight & Ewing's B. D. Loving 1, SEc Section 66, Blind Asylum land, western Stephens County, is showing for a Caddo lime discovery in developing 500 feet of oil in hole from lime section at 3488-97 feet. It will be deepened before using acid or nitro shot.

Widespread prospecting in Jones County accounted for 4 lower-lime failures, and a small oil discovery on the extreme east edge of the county. Kittery Oil Company's J. M. Blanton 1, near SWc of S. L. Underwood Survey No. 1, 2½ miles south of Lueders, pumped 53 barrels of 35.7-gravity oil initial after nitro shot in sand at 1624-32 feet. G. M. Gillespie et al's Samples 1, C NE NW Section 45, Deaf & Dumb Asylum lands, and on a southwest trend from the Avoca-Griffin district, was abandoned at 3505 feet.

North Texas Fields

Bonita pool gets flow for sand deeper than older pumpers.

Hull-Silk extension southwest gets 50 barrels per hour.

Wichita Falls. — The lower Strawn horizon in the Bonita pool, eastern Montague County, scored a natural flowing producer July 16 from 16 feet of sand that is about 1000 feet below the pay level of two pumpers completed earlier this year. Joe Benton and J. W. Holmes' Joe Bowers 2, 1750 feet north of their 2900-foot discovery in Section 55, MEP&P Ry. Survey, A-528, is rated at 250 barrels initial from saturation at 3853-69 feet, with light show in granite wash at 3780-3853 feet. The well kicked off when swabbed down, and made 10 barrels of 41-gravity oil per hour through 1-inch tubing choke. Casing pressure increased to 450 pounds after an 18-hour shutdown, then the well flowed 34 barrels of oil in 3 hours through 7/32-inch choke. Testing will continue for several days under choke before taking the proration potential. The upper pay did not carry sufficient saturation to make a producer.

E. B. Madden et al's Harry Smith 1-a, H. N. Baker Survey, A-49, situated 1½ miles southwest of the Bonita pool, passed up a nominal show at 3275-83 feet, and was drilling at 4120 feet against a 4500-foot depth contract. It occupies a low structural position for the area.

The deep lime pool on the west edge of Nocona, Montague County, has two active tests, and several more are to be authorized shortly. Sinclair-Prairie Oil Company's Gould Whaley 1, Section 16, BBB&C Survey, 2 miles east of the townsite, is scheduled to be abandoned after checking low on the Ellenberger, logged at 5503-70 feet. This outpost encountered water in the projected Strawn pay, and the formations thickened immediately above the Ellenberger. Youngblood and Bob Foree's Davis 1, northeast outpost for the Nocona deep pool, was drilling at 2000 feet after logging top of Canyon at 1775 feet. Rogers & Rogers' Burnett 2, 830 feet southeast of their discovery, has

spudded, and a second test is to be started on their Astley-Texaco 150-acre lease as a north offset to Stanolind Oil & Gas Company's recent completion. Sunray Oil Company is expected to announce a location shortly on the southwest edge of production. A large quota of necessary offsets will occur if the tests drilling and those pending are productive.

In the Walnut Bend pool, Cooke County, Cox & Hamon's Neu-Texaco 2-B, east edge location, tested 122 barrels of oil in 14 hours through perforations at 4910-35 feet and 4942-47 feet, with the hole bottomed at 5229 feet. Later test credited the well with a flow of 41 barrels in 3 hours on completion gauge. The partnership's Neu-Texaco 3-B logged top of the lower Strawn pay at 5185 feet, and was coring at 5203 feet.

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
Bridwell Oil Co., Bridwell 1	19	922
Bridwell 2	13	918
W. J. Logan 15, sec 26	*	1136
Brown et al, Perkins 2-C, blk 21	6	1002
Continental, DeMoss 9	*	996
Archer County (Hull-Silk)—		
Bert Ligon-Deep Oil Dev. Co., Wilson 4, lot 1	560	4336
Archer County (Wildcats)—		
Allday et al, J. A. Young 1, sec 2486	*	1541
Davis et al, F. M. Power 1, blk 19	*	1388
Young & Bernhard, Morrison 1, sec 2403	31	1293
Clay County—		
Cooke et al, Hansard 1, blk 8	*	507
Cooper et al, Duncan-Texaco 5, blk 16	*	1243
Duncan-Texaco 6, blk 16	*	1233
Duncan & Arnhold, Duncan 15, blk 14	188	1198
Schram et al, Summers 5, blk 1	*	349
Summers 6, blk 1	*	171
Cooke County—		
Carey & Norberry, Voth 1	*	2118
Robinson et al, Fred Herr 2, blk 11	6	870
Thompson et al, Weisman 6	33	933
Cooke County (Walnut Bend)—		
Sinclair Prairie, Best 11	600	5242
Best 13	924	4998
Cooke County (Wildcats)—		
McDaniel & Beecherl, J. F. Flusche-Texaco 1	*	1034
J. L. McMahon, J. F. Flusche-Texaco 1	*	1257
Russell et al, Stark-TCU 1	109	1143
Jack County—		
Humphrey et al, M. B. Cook 3-A	*	3345
Sutton & Gilliland, T. E. Craig 1, blk 3	*	369
Jack County (Wildcats)—		
Fulton et al, J. B. Gillespie 1, sec 2	*	550
Welch-Hill Oil Co., G. T. Griffin 1	*	340
Montague County—		
Continental, Seitz et al, Hott 20	105	2156
Throckmorton County—		
Knox Bros. Oil Co., McKeichan 2	15	744
Wichita County (K-M-A)—		
E. C. Oil Co., Burnside 2	544	4046
Fagadau et al, Wichita County fee 1	640	3950
Fain-McGaha Oil Corp., Griffin 12-B, lot 2	840	3795
Grace & Woods, Love 3	1040	4011
Hamilton et al, Martin 2-D, sec 36	984	3802
Harry Hines & Humble, Waggoner Bros. 6	480	3871
King Oil Co.-Perkins-Cullum, Ferguson 8, lot 6	840	3781
Staley Oil Co., First Nat'l Co. 15, blk 44	250	3905
Wichita County—		
Magnolia, H. Reilly 148	340	1357
Spencer et al, Weibner 30	*	234
Wilbarger County—		
Beasley et al, Davis 1-a, sec 62	*	3370
W. T. Waggoner Est., fee 25-AA, sec 14	10	802
Fee 26-AA, sec 14	6	1700
Young County (Wildcat)—		
Anderson et al, A. E. Hausler 1, sec 1	*	1150
Young County—		
Cable Oil Co., Williams 10	10	587
Collins et al, Smith 4	8	573
Parkin et al, A. C. Casey 1, sec 1906	*	601
Rathke Oil Co., Elkins 1-A	552	4235
Zweifel et al, J. C. Vaughn 1-A, sec 1	550	3988

*Failures; †Junked; ¶Million cu. ft. gas.

Collin County has been assigned a projected 4000-foot test by Sam L. Thomas et al, who have acquired control of a block held by Byrd & Frost, Inc. and McElreath & Suggett. Operations are starting on Tom Newsome 1, near center north 50-acre of east 70 acres of 171-acre tract, BBB&C Survey, 3 miles northeast of Celina.

Hull-Silk Extended

Enlargement of the Hull-Silk deep area, Archer County, to the southwest occurred when King Oil Company and Phillips Petroleum Company's Wilson 1, Lot 6, ATNCL Section 23, flowed 50 barrels hourly for 5 hours and 450 barrels of oil in 11 hours from Strawn at 4025-33 feet. This outpost was drilled to Caddo lime at 4735-4825 feet, testing water, then plugged back to 4735 feet to perforate pipe at 4010-29 feet. The well failed to respond to treatment with 1000 gallons of acid, but kicked off with aid of swab after using 3000 gallons of the chemical solution.

A ½ mile northwest extension for the Burns-Browning pool, western Clay County, was in prospect late last week when L. T. Burns et al's Pickett 1, W. W. Yearley Survey A-745, cemented 7-inch on saturated Strawn section at 4430-44 feet. Oil and gas shows were noted in cores. Top of pay is 2 feet higher structurally than the discovery. Frabor-Hodges Corpoartion et al's Kinder 1, Lot 11, Block 2, 4.6 miles due east of the above 2-well pool, was abandoned at 5527 feet in Caddo, topped at 5445 feet. This wildcat logged nominal oil shows at intervals in the Strawn section, but none warranted landing pipe to try for a completion. Youngblood-Foree et al's Wynn 1, 6 miles west by north of Bellevue, logged top of Home Creek lime at 1620 feet, and was drilling at 3575 feet.

Consolidated Oil Company's W. T. Waggoner 1-CC, NW SE SE H&TC Section 36, Block 6, Wilbarger County, and ⅞ mile north by east of the company's Ancell 1, K-M-A field outpost producer, was coring at 4930 feet. Top of Strawn lime was called at 3763 feet, or 196 feet higher on structure than the nearest producer.

The old Burkburnett district is staging a moderate drilling program on the Hugh Reilly farm, centering 5 miles southwest of Burkburnett, as result of the recent discovery of a prolific shallow area adjacent to stripper production. Magnolia Petroleum Company's Reilly 148 pumped 170 barrels of oil in 12 hours from sand at 1337-57 feet for a base allowable of about 26 barrels daily. The company's Reilly 149 swabbed 77 barrels in 3½ hours from sand at 1335-53 feet, and Reilly 150 is testing sand at 1332-43 feet. Maer & Staniforth's Reilly - George - Texaco 4, pumped 168 barrels oil in 12 hours from sand at 1360-66 feet. Wells are drilled with rotary by contractors for $1.25 per foot, and completed with spudder. Considering development cost and proration allowable these wells are the most attractive operations in North Texas. Magnolia Pipe Line Company is providing a market outlet.

DON E. McMAHON. Nicklos Drilling Company, Houston, is in a local hospital suffering from an infection caused by a spider bite.

East Texas Fields

Limestone County wildcat has oil in Woodbine sand

Mexia.—Zephyr Oil Company's Peeples 2, second wildcat drilled within the past 30 days by the company on a secondary fault zone in Limestone County and 2 miles southwest of Tehaucanna, filled 2000 feet with fluid, estimated one-third salt water and the balance 17-18 gravity oil. Production is from broken Woodbine at 2590-2645 feet. This showing will likely cause more prospecting in the immediate area.

Rescinds order on treating East Texas tank bottoms

The Texas Railroad Commission has rescinded its special order governing the treatment of tank bottoms in the East Texas field, leaving in effect the state-wide tank bottom order, the effect of which is to charge back such treated oil to the allowable of wells from which the oil originated.

The special East Texas order, issued in October, 1937, limited the charge-back to merchantable oil, and set up standards to determine merchantable oil. It was issued after a law suit had been filed challenging the commission's right to charge back the tank bottom oil.

Fourth well looms for Joaquin, Shelby County

Shreveport.—The fourth Glen Rose gas well for the Joaquin field, Shelby County, Texas, was in process of completion last week at McDaniel and Peweitt's McDaniel 1, William Snider Survey, which was plugged back from 6200 feet to the Glen Rose lime. Casing was perforated from 4993 to 5015 feet. July 20 the well was making estimated

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Stanolind, Maxwell 42-A (108.52-ac)	†	3285
Kilgore Area—		
Kemp et al, King 8, blk 138	500	3572
King 9, blk 138	500	3572
King 10, blk 138	600	3574
Texas Co., Cole 47 (145.14-ac)	2400	3504
Longview Area—		
Allen et al, Bonner 3 (18.9-ac)	288	3589
Arkansas F. O. Co., Stephens 11 (57.7-ac)	7200	3618
Stanolind-Tide Water, Persons 31 (151.18-ac)	7000	3514
Henderson County (Flag Lake)—		
Richards & Holloway, Inc., Tarkington-Cities Service 2	*	3050
Henderson County (Opelika)—		
Tide Water Associated et al, Lewis 1	*	8465
Henderson County (Wildcat)—		
Tide Water Associated et al, Scott 1	†	8972
Limestone County (Wildcat)—		
Zephyr Oil Co., Peoples 1	*	2825
Rains County (Wildcat)—		
McKinley & Hastings, McTaggert 1	*	720
Rusk County (Wildcat)—		
Hamm-Boggess et al, Ross Bros. 1	*	3836
Marion County (Rodessa-Jefferson)—		
Magnolia, Duncan 1, T. M. Davis sur	333	6002
Marion County (Pine Island)—		
J. D. Reynolds, Terry 2, W. Coor sur	20	2346
Shelby County (Joaquin)—		
W. H. Neel, McDaniels A-1, William Snider sur	*	1510

*Failures; †Junked; ¶Million cu. ft. gas.

20 to 30 million cubic feet of gas daily, but the gas had much less distillate content than the three previous Glen Rose gas-distillate wells in the field. It is 1000 feet south of production.

In the same area O. B. Siler and associates purchased the 28-acre W. Childers tract, W. M. Childers Survey, the lease carrying a drilling obligation. It is a west offset to Redditt and Gray's Pickering Lumber Company 1, a gas-distillate well in the Paluxy.

J. D. Reynolds has completed the second Tokio horizon oil well in the new offshoot of the Pine Island field, Marion County, Texas, at Terry 2, W. Coor Survey. It is making 20 barrels oil daily from 2346 feet.

CORRECTION

On page 55 of the July 3 issue of THE OIL WEEKLY, an item headed "McMurrey Buys Bell East Texas Gathering Lines" carried the opening sentence: "Bell General Pipe Line Company, second largest independent crude purchaser in the East Texas field, has sold its crude gathering system in the south portion of the field to McMurrey Petroleum Corporation for a reported consideration of $75,000."

A. H. Meadows, vice president of the Bell organization, writes that this statement was in error and makes the following correction:

"McMurrey did not purchase the East Texas system of Bell General Pipe Line Company, but only purchased certain gathering lines in the south end of the Bell General's system.

"Under certain contracts the Bell has leased the gathering lines sold to McMurrey and will continue to operate the system in the future exactly as in the past, and furthermore, will supply McMurrey Refining Company with its requirements of federal tendered allowable crude."

South Texas Completions

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bastrop County—		
Hughes, Lentz 2 (Red Rock)	75	2369
Ogden & Riddle, Riddle 5 (Riddle)	*	1733
Bexar County—		
Putnam, Wetz 16 (Von Ormy)	5	658
Rosenberg, Kelso 1 (Alta Vista)	5	1168
Guadalupe County—		
Stroube & Strouse, Miller 2 (Darst Creek)	75	2625
United North & South, Dix 14 (Darst Creek)	390	2538

CORPUS CHRISTI DISTRICT

Aransas County—		
Atlantic, Porterfield 15-B (McCampbell)	925	7200
Culton, Barry 2 (McCampbell)	¶1½ & 46	7370
Brooks County—		
Humble, McGill 15 (Kelsey)	*	6150
Hidalgo County—		
Drake & Edgerton, Guerra 2 (Samfordyce)	120	2889
Liberty, Sullivan 1 (Samfordyce)	*	3502
Jackson County—		
Mills Bennett, Lowrance 1 (Francitas)	†2 & 19	9030
Glasscock, Drummonds 2 (Vanderbilt-West Ranch)	320	5549
Porter, Dodd 1 (WC) Cordelle area	*	3503
Drushell 2-B (Cordelle)	225	2749
Jim Wells County—		
Atlantic, Bankers Mortgage 2-B (Alice)	425	5379
Bridwell, Beasley 2 (Ben Bolt)	375	5296
Callaway & Reese & Dunn, Smith 2 (Ben Bolt)	500	5450
Gorman & Yoakam, Schmidt 1 (WC), Orange Grove area	*	5713
Graham & Mosser, Mosser 1 (Reynolds)	350	5157
Gravis, Doran & Buescher, Richardson 2 (Clark)	¶10	5734
Howell, Hoffman 1 (WC), Camada area	†2 & 25	7041
Texas Gulf, Miller 2-A (Reynolds)	500	5172
Live Oak County—		
Sal Vieja, Hines 1 (WC), GC&SF RR survey 399	*	3507
Simmons, Reagan 5-B (Oakville)	15	2840
McGriff 8-B (Oakville)	85	2139

Southwest Texas Fields

Farmouts cause new wildcatting peak in district.

La Gloria mile outpost looks like crude producer.

Corpus Christi.—South Texas Gulf Coast wildcatting program reached a mid-summer peak during the past week with more wells being announced or commenced during the last seven days than during any previous corresponding period since the first of the year.

The majority of the new work is the direct result of farmouts. Victoria County led in new activity, apparently marking the commencement of a Vicksburg sand play along the Coletto Creek trend.

Tom L. Gunter et al will drill a 5500-foot test on the Dietzel tract a mile east of Coletto Creek field, while George Smith has a two-well program. One is to be on the Marhiljohni tract about two miles east of the field and the second will be drilled about a mile north on the Stubbs tract. Several other operations will be drilled in the field or as outposts. This general area has been partly tied up by litigation for several years, delaying activity.

Farther east and just south of Victoria, John L. Mayo's Vogt 1, passed through a 4700-foot water and sand and was just below that level. Upon the completion of this well, Weaver 1 is to be drilled about six miles south of the Coletto Creek by the same operator. At least two more wells are contemplated in the general region, but official announcement of the deals has been delayed.

In Goliad County, Mayo et al will commence two wells to be carried to 3500 feet to test the Coletto Creek sands. The first will be in Section 20.

Two wildcatting deals have been made in Refugio County. On the southern portion of the Bonnie View ranch and in the vicinity of several wells which showed oil and gas, Sunset Oil Company and L. & E. Oil Company et al's Heinen 1, SEc Section 10, will be started immediately. It is projected to 7000 feet. Sun Oil Company and Continental Oil Company are supporting the operation. Just southeast of Woodsboro, another key operation is in prospect with contract having been awarded to Trinity Drillers, Incorporated, for W. F. Houser's Woods 1. The well is largely supported by the Continental Oil Company and is on a key geophysical prospect.

San Patricio County has two farmout tests in immediate prospect. Frank Zock will drill a 6500-foot hole in the northeastern portion of Section 20 on a Continental Oil Company farmout, the well being further supported by the Shell Oil Company and Atlantic Refining Company. Byron Rife's test in the northeast portion of Section 26 will be carried to 6000 feet. It is on a Saltmount Oil Company farmout, the Humble Oil & Refining Company further supporting the operation.

Another district likely to be given an intensive play is Robstown, where Shield Oil Company is opening a new Frio sand oil field. This Nueces County wildcat was awaiting orders at 7015 feet late in the week while negotiations were underway to carry it deeper. The well may go to 8000 feet before plugging back to complete in an oil sand at 5548-62 feet.

Keen interest centered around Magnolia Petroleum Company's crude strike at LaGloria, Jim Wells County. D. O. Maun 1, a mile west of the discovery distillate well, was cleaning into the pits, making some oil and wash water with no gauge available. The well has been carried to 6814 feet. On first attempt to complete through perforations at 6804-11 feet, it showed 200 feet of 38.5-gravity oil, 140 feet of salt water and 1125 pounds pressure in 12 minutes. The perforations were squeezed, plug

Company, Well and Location	Init. Prod. Bbls.	Depth
Nueces County—		
Agua Dulce, Talbert 3 (Agua Dulce)	¶40	4810
Awoeb, Bock 1 (Minnie Bock)	350	3828
Mills Bennett, Poenisch 1 (WC), 5 mi se Corpus Christi	*	7508
Graham, Taylor 1 (WC), section 1, blk 6	*	6024
Killam, Enriquez 1 (Clara Driscoll)	*	5702
Reed & Cox, Ruegg 2 (Minnie Bock)	*	4085
Shell, Flato 6 (Saxet)	350	4868
Southern Minerals, King 4-A (Richard King)	500	5382
2-B (Richard King)	350	5419
Refugio County—		
Quintana, O'Connor 41-C (Tomoconnor)	1500	5925
Williams 10-A (Tomoconnor) (WC)	¶5	6122
San Patricio County—		
Grote & Corgey, McCampbell 7 (McCampbell)	900	7150
Plymouth, Solar & Ficke 6 (East White Point)	500	5682
Seaboard, Blumberg 1 (WC), East Mathis area	¶2½ & 12	6015
Victoria County—		
Gulf, Traylor B-21 (Heyser)	500	5488

LAREDO DISTRICT

Duval County—		
Barnhouse, Barnhouse 1 (Seven Sisters)	*	lcn.
Benedum-Trees, Puig 20 (North Sweden)	420	4763
Clark & Cowden, Peters 3-A (Rancho Solo)	62	1859
Cuellar, Cuellar 7 (Hoffman)	¶5	2870
Hiawatha, Miller 10 (Longhorn)	400	4907
Southland 15 (North Sweden)	275	4789
Longhorn, Miller 6-A (Longhorn)	500	4037
Magnolia, DCRC 13 (189) Cedro Hill	35	1455
DCRC 30 (201) Eagle Hill	250	2154
Weil 39 (Hoffman)	50	2858
Porter, Mew 3 (Fitzsimmons)	525	4304
Sun, Brueggeman 16 (Fitzsimmons)	350	4286
McMullen County—		
Jones, Ezzell 94 (WC), White Creek area	*	2141
Schumway, Shiner 14 (WC), Section 62	*	1120
Starr County—		
Hillman, Gonzales 1 (WC), share 232, por 69	*	3622
Webb County—		
Houser & Campbell, Longoria 1 (WC), Volpe area	*	2686
Schimmel, Benavides 1 (WC), West Cole area	96	2350
Zapata County—		
Buffalo, Hinnant 15-C (Mirando Valley)	105	1984
Hinnant 16-C (Mirando Valley)	90	1983
Cartter & Rubsamen, Lopez 1-A (South Mirando Valley)	85	1826
Nordan & Morris, Haynes 19-C (Comitas)	*	1147

*Failures; †Junked; ¶Million cu. ft. gas.

drilled out to 6809½ feet, and new holes made. On a drill-stem test, the well flowed oil and some water under 155 pounds working pressure in 30 minutes. The recovery was 1200 feet of oil with 150 feet of salt water.

An oil field may finally be developed in the Wade City area of this county. Hunter, Quinn and Rowe's Pundt 1, was reperforated at 4803-8 feet, lower in the discovery sand, and was cleaning into the pits through small choke. Pressures were 1830 pounds on tubing and 1750 pounds on casing. Slightly higher in the zone, it flowed 30 barrels of distillate and 3,000,000 cubic feet of gas per day.

Reynolds, new Vicksburg-Frio strike in Jim Wells County, had operations increased to six during the week with several more locations expected to be on the active list soon. This new reserve has three producers.

Several Edwards lime wildcats are started

San Antonio.—The Balcones Fault zone regained a fading interest during the week through the commencement of a number of new wildcats, most of which are projected to the Edwards' limestone. Milam, Zavala, Travis, Williamson, Bastrop, Guadalupe and Bexar counties shared in the new work. In the meantime, deals are pending for the drilling of wells in Frio and Wilson counties.

This new program, supported entirely by independents, is a bright spot, especially in the face of a low discovery ratio on exploratory operations in this region.

Offset to White Creek discovery is failure

Three Rivers.—White Creek, Live Oak County, received a set back last week through the abandonment at 1436 feet of Wilkins Seacord and Sure Oil Company's Bonham-Marsden 1, NE Block 3010. The well is a direct offset to a 350-barrel per day producer and was expected to make an excellent well in the 1400-foot zone.

On the Atascosa-Live Oak County line and two miles north of Fashing, a Hockleyensis sand gas well resulted from the testing of Pulliam and Dickson's Henke 1. The well, located in Donaven and Hickok surveys, found the zone at 649-56 feet. Packer on the casing failed to hold and the well was coring for the Pettus sand below 900 feet at last reports.

Texas permits gain

Permits for drilling 276 new wells in Texas were approved by the Texas Railroad Commission last week, 48 more than were allowed the week before.

Operators in the East Texas field were permitted to drill 33 wells, including 24 in Gregg, five in Rusk, three in Upshur and one in Cherokee County. Six locations were listed from the remainder of the East Central Texas territory.

There were 43 locations approved in West Texas with 13 in Yoakum and 10 in Ector County, while 30 locations were reported from West Central Texas, including 10 in Shackelford County.

Southwest Texas led the state with 68 permits including 15 in Duval and 12 in Jim Wells County. Gulf Coast producers were allowed 25 locations.

The commission approved 52 locations in the North Texas District, with 17 in Wichita County, while Panhandle operators reported 19 permits.

Webb County wildcat rated at 96 barrels on pump

Laredo.—A potential test on V. G. Schimmel's Benavides 1, Webb County wildcat, rates the discovery at 96 barrels per day on pump plus 10 percent salt water from the Mirando sand at 2336-50 feet. The well, in Section 693, is about two miles southwest of the Volpe field and is between the oil producing sectors of the West Cole field. Schimmel has commenced another Mirando sand test a mile south.

Texas includes spacing in new proration rules

New field rules based upon hearings heretofore held were issued by the Texas Railroad Commission last week.

For the West Ranch field in Jackson County, the commission instituted a straight 20-acre spacing program, with proration on acreage and unit-potentials, 50 percent to each factor. A tolerance of 10 acres is allowed on the last unit drilled.

The West Ranch rules call for 1300 feet of surface casing set 30 feet below

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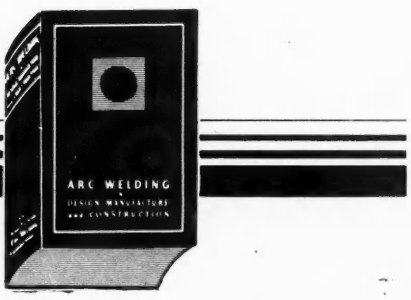

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artesian water sands and cemented to the surface, with an oil string cemented 1000 feet above the shoe. The rules call for a gas/oil ratio of 2000:1 with displacement factor, and the displacement factor applies also to gas wells.

For the Mankins Deep pool in Archer County, 40-acre proration units were authorized, with a 20-acre tolerance and proration on an acreage and per-well basis. However, wells may be drilled on a 330-660 pattern. The string includes 100 feet of surface casing cemented to the surface and an oil string set with 100 sacks of cement.

An emergency spacing rule was promulgated for the Cordele field in Jackson County, calling for wells spaced 660 feet apart and 330 feet from lease lines. A hearing on this field is set for July 24.

Hearing on pollution set at Austin for August 3

Representatives of the oil industry in Texas interested in pollution have been called to meet in Austin August 3 for a general discussion of the problems incident to disposal of wastes.

The meeting was called by a legislative committee authorized to investigate pollution preliminary to a projected revision of laws governing pollution. H. H. Schueneman, representative from Kenedy, is chairman.

Novice operators want 20-acre spacing rule

States Oil Corporation and other operators in Novice field, Coleman County, represented by A. H. Furse, asked the Texas Railroad Commission for a 20-acre spacing and proration unit at a hearing July 18.

Furse asked that wells be spaced 330-990, but was willing to accept any plan which would insure that the field is not overdrilled. He asked that proration be allocated 50 percent on acreage and 50 percent on potential.

State-wide rules were acceptable for other drilling regulations in the field, he said. Three wells have been completed in the 3600-foot Gardner sand in the Lower Strawn section.

South China hearing set

A hearing to take evidence upon the South China field in Jefferson County has been called by the Texas Railroad Commission for August 1 in Austin. Field rules will be discussed.

Hearing on Lovell Lake

The Texas Railroad Commission has called a hearing for August 4 at Austin to consider rules and regulations for the new Lovell Lake field in Jefferson County.

Shell Union floats 85 million debenture

One of the largest corporate financing projects of the year was announced Jury 18 by Shell Union Oil Corporation in an offering prospectus on an $85,000,000 bond issue. The bonds will draw 2½ percent through a 15-year term and are offered at $97.75. A group of Wall Street investment firms was assigned as agent to handle the offering. Proceeds of the bonds will be used to retire existing issues carrying higher coupon rates.

Texas Gulf Coast

Chocolate Bayou wildcat reported to have oil show.

Prison farm test quits after promising new field.

Houston.—Glenn H. McCarthy's Houston Farms Development Company 1, in the Chocolate Bayou area, Brazoria County, is rumored to have logged 25 feet of Frio sand showing oil around 8900 feet which will be tested if the next 200 feet, which will be cored and drilled the coming week, does not show better sands. The wildcat is bottomed at nearly 10,000 feet, which is contract depth. It was decided late last week to carry the well 200 feet deeper. An electrical log is reported to have been run around 9650 feet and confirmed the above referred to sand.

On the West Palacios prospect, Matagorda County, Sun Oil Company's Cavalin 1 was flowing again after being perforated with 10 shots from 7850 to 7860 feet. It is flowing 60 barrels of fluid daily, 16 percent wash water and the balance oil. Tubing pressure was 350 pounds and casing pressure, 550 pounds.

Northwest of production at Sandy Point field, Brazoria County, Hamman Exploration Company has abandoned Darrington State Prison Farms 1 at 9120 feet in a sidetracked hole. Several months ago this test indicated it would open a new producing area for the Gulf Coast. Sands were logged in the Vicksburg formation, and a test at 8350 to 8380 feet yielded 39-gravity oil. The well died. A test at 8857 feet showed gas; tubing pressure was 2000 pounds and casing pressure, 500 pounds. The hole was plugged back and sidetracked. At 8868 feet the test showed gas again.

Get Mud at Clodine

In the Clodine area, Ft. Bend County, Jack Frazier and O. S. Martin made a drill stem test on Blakley 1, F. Frederick Survey, at 7920 to 7980 feet and recovered 375 feet of mud in 20 minutes. The hole, bottomed at 8052 feet, is being reamed to drill deeper. The operators have cored salt water sands and sands with odors of oil around 7900 feet. No shows of oil have been reported.

On the flank of West Columbia field, Brazoria County, Mike Hogg has completed Hogg-Hamman 2 at 2578 feet. Top of the broken sand was found at 2556 feet and one foot of oil sand was recovered from 2556 to 2578 feet. Seven-inch casing was set at 2553 feet and the well came in flowing 86.35 barrels in 12 hours through ¼-inch choke. Tubing pressure was 250 pounds; casing was sealed.

Three miles southwest of Addicks in Harris County, Housh & Thompson's Krey 1 was abandoned at 7818 feet last week after encountering several small broken shows of oil up the hole. At 7814 to 7818 feet salt water sand was cored.

Joe's Lake field, Tyler County, is having its first deep test drilled. Republic Production Company's Hurd Fee 22, most westerly well in the field, is down to 8346 feet in shale and is below the regular producing sand. The well is exploring for deeper Wilcox sands. Joe's Lake is producing from Wilcox at 7600 to 7700 feet.

Jack Frazier and Sinclair Prairie Oil Company has abandoned another well along the Wilcox trend in Polk County. Bergman 1, A. Viesca Survey, was abandoned at 7576 feet in shale. No shows of oil were reported. Salt water sands were cored in the upper horizons.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Tyrell 16	672	7080
Clam Lake—		
Shell, McFaddin-State 3	*	4001
Dickinson—		
Bennett, Broughton 1-B	63	8031
Mid-States, Holmes-Deats 1	77	8703
Eureka—		
Tide Water, Lackner 2-B	192	7943
Fairbanks—		
Amerada-Stanolind, Foley 5	196	6848
White 14	224	6854
Noble & Baker, Hillegoist 4	146	6840
Stanolind, Jahnke 5	159	6837
Union Prod. Co., Whitehead-Rash-Phillips 8	154	6851
Hastings—		
Stanolind, Moore C-15	652	6078
Joe's Lake—		
Republic, Fee 21	184	7743
Louise—		
Gulfstream, Whiteside 7	*	5341
Pure, Lancaster 2	291	5155
Silsbee—		
Republic, Gelard 2	87	6846
Sour Lake—		
Geo. Echols, Merchant Estate 1	*	4760
Spindletop—		
Stanolind, Gladys City 104	*	4752
West Columbia—		
Mike Hogg, Hogg-Hamman 2	172	2578
Withers—		
Texas Co., Pierce Estate C-60	20	5526
Brazoria County—		
Hamman Expl. Co., Darrington State Prison Farms 1, Sandy Point area, A. McFarland sur.	*	9125
Harris County—		
Housh & Thompson, Krey 1, Addicks area, Meadowbrook Farms subd	*	7818
Polk County—		
Jack Frazier-Sinclair, Bergman 1, Goodrich area, A. Viesca sur.	*	7575

*Failures; †Junked; ¶Million cu. ft. gas.

More completions than starts in Oklahoma

Tulsa.—Field activity for Oklahoma during the past week held on a par with previous weeks with 44 completions listed, 26 being oil wells making a total initial potential of 4381 barrels. One gas well had an open flow of 5 million cubic feet daily. Thirteen of the completions were failures. Three locations were abandoned and one test was converted into a salt-water-disposal well. Thirty stakes were driven during the period. Pottawatomie, Okmulgee, Tulsa and Creek counties each had 3 apiece, followed by Stephens, Muskogee, Okfuskee, Oklahoma, and Pawnee with 2, Carter, Comanche, Kiowa, Pontotoc, Seminole, Garfield, Kay and Payne 1 each.

South Louisiana

New sands found at Grand Bay and Bay St. Elaine. Humble will test gas sand in Perkins area wildcat.

Lake Charles.—Grand Bay received another new producing sand last week when Gulf Oil Corporation perforated State 2-QQ with 30 shots at 8750 to 8760 feet and it came in flowing 485 barrels of 35.8-gravity oil daily through ¼-inch choke with a tubing pressure of 1550 pounds and a casing pressure of 1500 pounds. Grand Bay is now producing from 6100 feet, 7100 feet, 8700 feet and 9700 feet.

A new producing sand was found at Bay St. Elaine field, Terrebonne Parish, last week by The Texas Company. State B-3 was drilled to 10,513 feet, plugged back and perforated with 120 shots at 6325 to 6390 feet, and came in flowing 119 barrels of 24.7-gravity pipe line oil daily through a ⅛-inch choke with a tubing pressure of 900 pounds. State B-3 is also the deepest well ever drilled at Bay St. Elaine field.

Golden Meadows Too

A new producing horizon was discovered at Golden Meadows field last week by Bennett Oil Corporation's Collins 1. The well was perforated with 40 shots at 5132 to 5173 feet and it came in making 1,500,000 cubic feet of gas daily and 18 barrels of 34-gravity oil through a 12/64-inch choke with a tubing pressure of 1760 pounds and a casing pressure of 2040 pounds. This makes the third producing horizon at Golden Meadows. The first sand was found at 8500 feet and the second at 7900 feet.

After drilling to 12,526 feet, The Texas Company has abandoned L. L. E. Golden Meadows 1 at Golden Meadows following more than a dozen production tests. The last, made at 2685 feet, showed only wash water.

John Vocarra-Terduche Oil Company made a test on Cheramie 1 in a new sand at 4417 to 4426 feet last week and recovered salt water. Perforations were squeezed on this Golden Meadows well for another test. While drilling at 6220 feet last week Bennett Oil Corporation's Falgout Holding Company 1 tried to blow out.

In the Perkins area, Calcasieu Parish, Humble Oil & Refining Company will make a test of Edgewood Land 1, which was drilled to 8005 feet and set 5½-inch casing at 7075 feet. Gas was logged at 7038 to 7065 feet, but the bottom portion of the sand is reported to have shown salt water. Another sand showing gas and oil found at 5455 to 5481 feet, showed salt water on a test.

Welsh Proven Dome

Welsh field, Jefferson Davis Parish, which has been producing oil since 1903, was established as a salt dome the past week when Stanolind Oil & Gas Company's Irwin-Bishop 3-B, Section 28-9s-5w, logged salt at 6315 feet. The well is on the south flank of the field. Discovery of salt will probably lead to further exploratory drilling around the flanks of the old dome.

At West Gueydan field, Vermilion Parish, Magnolia Petroleum Company is preparing to make a test in a new sand at 6685 to 6695 feet in Ferguson 2. The hole was drilled to 7172 feet and a drill-stem test at 7149 to 7172 feet recovered 3300 feet of salt water. Seven-inch casing was set at 6812 feet.

In the Unknown Pass area, Orleans Parish, W. T. Burton's L. & N. 1, down to 10,274 feet, was running an electrical log, and will also take side wall cores. When drilled to 10,138 feet some time ago, it blew out and drill pipe was stuck.

Deep One In Trouble

Northwest of the discovery well at DeLarge, Terrebonne Parish, Fohs Oil Company's Buckley-Mahler 1 has encountered trouble at 12,942 feet. The crew is trying to recover drill pipe before drilling to 13,266 feet, where the producing sand was found in the discovery well.

One of the best wells to be completed at Horseshoe Bayou field, St. Mary Parish, is The Texas Company's St. Mary Land Company 2, which drilled to 10,883 feet and set 7⅝-inch casing at 10,858 feet. It came in flowing 360 barrels of 38.2 gravity oil daily through a 10/64-inch choke with a tubing pressure of 1890 pounds.

At Lake Mongoulois salt dome, St. Martin Parish, The Texas Company continues to core gas sands in State 7. Last week another gas sand was cored at 9946 to 9976 feet. The previous week a gas sand was logged at 9816 to 9844 feet. Other sands have been cored up the hole.

In Vermilion Parish, Louisiana Land & Exploration Company's Louisiana Fur 1, a wildcat, was drilling at 10,740 feet in shale after having logged a sand with an odor of gas at 10,199 to 10,209 feet.

Continental Oil Company has completed another well on the south side of South Roanoke field, Jefferson Davis Parish. Calcasieu National Bank 1 was drilled to 9984 feet and 8⅝-inch casing was set at 9867 feet. The well came in flowing 272 barrels of 51.7 gravity oil in 23 hours through a 3/16-inch choke, with a tubing pressure of 4900 pounds and a casing pressure of 1300 pounds.

Atlantic Refining Company will shoot Rice Land 1 at Merryville prospect, Beauregard Parish, with nitro-glycerine for a production test. Last week casing was perforated with 72 holes at 7587 to 7598 feet. An hour drill stem test with a 2500-foot water cushion recovered 100 feet of mud, no pressure and no salt water.

Wilcox Test Salty

In the Marksville area, Avoyelles Parish, Adams Oil & Gas Company et al's Poore Farms 1 was coring at 6430 feet in shale after topping the Wilcox at 5606 feet. The upper part of the formation showed salt water. A thin section of sand with an odor of oil was also cored. Sparta sands showed salt water.

On the north side of Eola field, Avoyelles Parish, Amerada Petroleum Corporation's Stokes 1, coring in shale at 8015 feet, is reported to be running low. No shows of oil were logged in Cockfield or Sparta and the well is believed to have cut a fault. Amerada completed two wells at Eola last week. Irion 1, completed at 8400 feet, perforated from 8325 to 8400 feet with 300 shots. The highest well to date at Eola, it flowed 746 barrels of pipe line oil daily through a ¼-inch choke. Avoyelles Bank & Trust Company made 238 barrels daily through a 3/16-inch choke from 8585 feet. Several important outpost locations were made last week.

On the northeast side of Villa Platte, Continental Oil Company's Derouen 2 was coring in sandy shale below 10,300 feet at the end of the week and, according to reports, had logged a good section of Wilcox sand. This is the fourth well at Villa Platte to be carried to Wilcox. The southwest side showed that it would not produce from Wilcox when Vidrine 1 was abandoned. On the south side Tate 1 logged a good Wilcox section but was plugged back and completed in an upper sand. Southeast side of the field Haas 3 was completed as a good Wilcox well. According to contours of the field the Wilcox will cover a large area; it may cover more than the Sparta.

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bay St. Elaine—		
Texas Co., State B-3	119	6390
Bancroft—		
Republic, Lutcher Moore 8	216	7328
Baton Rouge—		
Geo. Echols, Geblin 1	410	6481
Wm. Helis, Duplantier 3-D	242	6483
Texas-Canadian, Bogan 1	*	6568
Charenton—		
Fifteen Oil Co., Brulatour 1	*	10,690
Pan American, Veeder 16	125	1291
Robichaux 7	5	1035
East Hackberry—		
Union Sulphur, O'Quinn 1	288	7603
Eola—		
Amerada, Avoyelles Bank & Trust 1	238	8565
Irion 1	750	8400
Golden Meadows—		
Texas Co., L. L. E. Golden Meadows 1	*	12,526
Grand Bay—		
Gulf, State QQ 2	485	8760
Horseshoe Bayou—		
Texas Co., St. Mary 2	360	10,883
New Iberia—		
William Helis, Sabatier 6	*	2451
South Roanoke—		
Continental, Calcasieu National Bank 1	288	9985
Sulphur—		
Union Sulphur, Fee 785 (wo)	110	4290
Villa Platte—		
Continental, Fontenot 2	253	9042
Deville 3	245	9035

*Failures; †Junked; ¶Mil. cu. ft. gas.

Louisiana permits

Shreveport.—Thirty-two drilling permits were issued last week by the Louisiana Conservation Commission of which 14 were in North Louisiana, divided among the following parishes: Bienville, 1; Caddo, 4; Grant, 1; Morehouse, 3; Ouachita, 1; Sabine, 2; Union, 1, and Webster, 1. The 18 in South Louisiana were in the following parishes: Acadia, 3; Avoyelles, 2; Cameron, 3; Evangeline, 1; Iberville, 1; La-Fourche, 2; Plaquemines, 1; Rapides, 2; St. Martin, 1; St. Mary, 1, and Terrebonne, 1.

North Louisiana Fields

Deep lower Marine wildcat planned for Elm Grove. Well mile from Sligo field will perforate Pettet.

Shreveport. — With the Shreveport and Cotton Valley fields, the two most active districts in North Louisiana, failing to enter the completions column last week, chief interest in North Louisiana centered in staking of a wildcat location for a lower Marine wildcat test in Caddo Parish, 12 miles south of Shreveport, on the southwest flank of the shallow Elm Grove field in Bossier Parish.

The new test is Prairie River Syndicate's Hutchinson B-2, located 4055 feet north and 480 feet east of SWc 3-15n-12w, 2½ miles north of the same company's Hutchinson 1, Section 15-15n-12w, that went into the lower Marine to 9141 feet, with several showings reported in lower formations. With an elevation of 153 feet this test logged massive anhydrite from 4243-4481 feet and the lower anhydrite stringer at 4562-64 feet. Travis Peak was topped at 5840 feet and the lower Marine was logged at 8880 feet. A drill stem test of a sand at 9081-9103 feet, with the test made from 8987 to 9110 feet, showed ½ to 1 million cubic feet of gas daily, with ¼-inch choke at top and bottom and opened for 1 hour and 15 minutes.

Northeast of Urania along the Angelina-Caldwell flexure, Arkansas Fuel Oil Company (Cities Service) plans an 8000-foot test within six months, if a geophysical survey made on a large block taken under option around Section 1-11n-3e, Caldwell Parish, warrants a test. In the same area, Critchett and Woods plan to deepen to 5000 feet in Kyles 1, NE SW NE 18-11n-3e, in the same parish, this test having been shut down recently at 3003 feet.

One mile southeast of Sligo production, H. M. Harrell and associates had set casing for perforating in the Pettet (basal Glen Rose) lime, at total depth of 5683 feet in the Travis Peak in Thompson 1, Section 20-17n-11w. The test had showings in the Pettet, regular producing horizon at Sligo, which is in Bossier Parish. Barnes and Smith are moving in materials for a Rapides Parish wildcat test, Eota Realty Company 1, SW SE 12-4n-3w.

Six miles southeast of Colfax, Grant Parish, R. G. Smitherman, Jr., of Shreveport is rigging for a Wilcox sand test, located 150 feet north and west of C 1-5n-3w. In the same parish, around Section 9-7n-3w, Levine and Aken of Shreveport have assembled a block. Also in Grant Parish, Longwood Oil & Gas Company spudded a wildcat to go 5500 feet in Section 9-5n-3w. In Concordia Parish John Dale and associates are negotiating for geophysical option on 20,000 acres around Section 8-4n-8e, for a Wilcox test.

E. T. Oakes and F. W. Fitch, the latter a manufacturer of hair shampoo, are rigging for a Glen Rose test on the southwest side of the Lisbon field, Claiborne Parish, this being Loyd 1, SW SW 10-20n-5w. Plans have been practically completed for an 8500-foot test at Lisbon to be drilled on a cooperative plan among operators by A. O. Olsen of Lisbon. Plans call for Olsen to deepen a test from the Glen Rose first, and if two such attempts fail, then to drill a completely new hole.

Rodessa's Birthday

Rodessa as an oil field will be four years old July 24, although first gas was found there in August, 1930. It was July 24, 1935, that United Gas Company completed I. L. Young 1, SE SE 21-23n-16w, Caddo Parish, Louisiana, as the field's first oil well from the Glen Rose series at 6000 feet, and set off exploration campaign in North Louisiana and Arkansas that resulted in discovery of deep production at Cotton Valley, discovery of Lisbon and Shreveport, as well as Buckner, Atlanta, Magnolia, and Schuler, the latter four in Arkansas. To date 1085 wells have been completed at Rodessa, located in parts of three states.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bienville Parish (Bear Creek)—		
Hunt Oil Co., T. A. Loe 1, 2-16n-6w	160	6678
La Salle Parish (Urania)—		
C. C. Walsenham, Dean 4, 25-9n-1e	50	1631
Webster Parish (Wildcat)—		
O. F. Shaver et al, E. L. Stewart 1, 4-18n-10w	*	2502

*Failures; †Junked; ¶Million cu. ft. gas.

Arkansas Fields

Double extension indicated by Magnolia outpost tests

El Dorado, Ark.—Indications of extension one location east and west in Magnolia field, Columbia County, Arkansas, were given last week. On the west edge of the field Oliphant Oil Company's Joel Jones 1, NE NE 20-17-20, ran final casing string with total

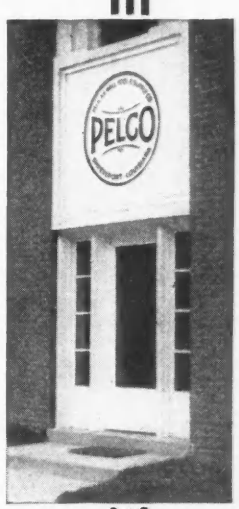
Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Magnolia)—		
Arkansas F. O. Co., Glasgow-Crisp 1, 23-17-20	960	7666
Atlantic, J. A. Foster 1, 24-17-20	696	7590
Shell, Peoples Bank 1, 24-17-20	648	7611
Vaughn et al, L. Paschal 1, 22-17-20	250	7520
Joel Jones 2, 21-17-20	624	7592
Union County (Rainbow City)—		
J. R. Lockhart, Jerry 1, 15-17-14	400	2617

*Failures; †Junked; ¶Million cu. ft. gas.

WHY is a Customer?

There is only one definition of a customer, but he can have many reasons for his patronage. The least complimentary of these is convenience. We never permit ourselves to be too proud of a customer until he begins to feel that we are GOOD PEOPLE TO DO BUSINESS WITH. Friendship, or at least respect and confidence, are essential to permanent and satisfactory business relations.



PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO TRADE MARK

Lake Charles—Houma—Converse
New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

depth of 7550 feet, and on the east edge Atlantic Refining Company's Spain 1, NW NW 18-17-19, cored in saturated lime at 7576 feet. Three new wells were completed in this field during the last week to bring to 43 the number there.

The ninth well of Village field, also in Columbia County, was in completion stage at Standard Oil Company of Louisiana's Lewis B-1, Section 15-17-19, after casing was perforated from 7423-25 feet.

One mile east of production at Buckner, another Columbia County field, Standard of Louisiana made location and was rigging for Nancy Johnson 1, SW SW SE 9-16-22.

Atlantic Refining Company's Pine Woods Lumber Company 1, Section 16-18-22, a wildcat, drilled shale and sand at 7306 feet after missing a drill stem test in Lower Marine (Cotton Valley) series at 7137-45 feet where a showing was logged. Later a core at 7149-67 feet showed salt water. Atlantic has recently been buying adjacent leases to this test.

Lion Oil Refining Company's Tissue 1, Section 15-18-19, looming third oil producer at Atlanta, was coring porous oolitic lime at 8244 feet.

H. H. Gildon and associates of Texarkana acquired a geophysical option on a block of leases in Township 16, Range 20, near McNeil, Columbia County.

Magnolia field, Arkansas to have gasoline plant

St. Louis, Mo.—Shell Oil Company announced July 18 it had joined with The Atlantic Refining Company and Petroleum Finance Corporation to build immediately a jointly-owned natural-gasoline-extraction plant in the Magnolia field of Columbia County, Arkansas. The announcement was made by Alexander Fraser, president. Intake capacity of the plant will be 15,000,000 cubic feet of gas daily, which it is estimated will adequately take care of the field's gas production. It is estimated daily production will be 50,000 gallons. Loading lines will be laid to, and loading rack facilities maintained at, the town of Magnolia. Plant site has already been selected and engineering parties are running surveys for plant and pipe line facilities. The plant is expected to commence operating by the end of November. Construction and operation will be in the hands of Shell Oil Company.

The Magnolia plant is the second gasoline extraction plant announced for construction this year by the Shell organization; the first—in the Wasson field of West Texas—being already under construction. As in the case of Wasson, the Magnolia plant will embody the most recent developments in scientific research and engineering design evolved by the technologists of the industry.

Mississippi Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Calhoun County—		
L. C. Lucas, Boland 1, 9-22n-9e..	*	794
Clarke County—		
Ryan, et al, M. Eddins 1, 29-2n-14e	*	1502

*Failures; †Junked; ¶Million cu. ft. gas.

New Mexico Fields

Development of Loco Hills promises to be large.

Chaves County wildcat logs oil showing in lime.

Hobbs, N. M.—Development of Loco Hills pool, recent Eddy County strike, promises to assume sizeable proportions as extensions are made to the north, west and southwest. Flowing production was extended slightly more than 1 mile southwest when Martin Yates and Continental Oil Company's Brainard 1, NE NE NW 11-18s-29e, flowed 300 barrels daily while cleaning out cavings caused by a 140-quart nitro shot at 2642-71 feet. The hole is bottomed at 2701 feet. A comparatively large producing area is indicated. The flush oil yield declined rapidly, indicating a low recovery per acre generally that does not warrant close well spacing proposed by some operators.

Entrance of the Texas-New Mexico Pipe Line Company into Loco Hills pool to provide a needed market outlet has been promised. The mid-month proration schedule credits the area with 13 oil wells, including 3 marginal producers, that have a combined allowable of 775 barrels daily. Eddy County and the Maljamar field, Lea County, have only 58 wells that can produce their top allowable of 68 barrels daily.

In Chaves County, Western Minerals Corporation's Dow 1, C SW NW 27-10s-30e, logged a show of oil in lime at 2878-84 feet, and halted at 3005 feet to run pipe for a production test. Top of the lime was called at 2870 feet, with an elevation of 4086 feet. Hightower et al's Billingslea 1, which promises to become the first deep lime producer in Chaves County, was cleaning out cavings after a 400-quart nitro shot at 3365-3430 feet. The hole was plugged back from 3445 feet. The well swabbed 40 barrels oil daily prior to the shot.

Activity Declines

New activity in Lea County declined to 6 operations the past week after recording 15 the previous week. No wildcats have been authorized lately, and there are no important prospects pending.

Magnolia Petroleum Company's State 1-S, C NE SW 34-16s-34e, situated 3¼ miles northwest of the Vacuum field, was ordered plugged last mid-week after encountering additional water in lime at 5682-90 feet. It was carried about 1000 feet below the Vacuum pay level, using cable tools after landing 7-inch at 4350 feet.

Late completions in the Vacuum field include Magnolia Petroleum Company's State-Bridges 35, an inside test, that flowed 256 barrels initial after 480-quart nitro shot at 4485-4742 feet. Two new operations were assigned the field. Phillips Petroleum Company's State-Santa Fe 31, C SE NW 26-17s-35e, has started up as a north offset to the most easterly producer. Drilling & Exploration Company's State-Shell 2-O, SE SW NE 34-17s-34e, near the southwest edge of production, has landed surface pipe.

Continental Oil Company et al's Jack 2-A-29, NE NE SE 29-24s-37e, west edge producer for Mattix field, flowed 56 barrels of oil per hour, with gas volume rated at 12,280,000 feet daily, when tested at 3570 feet via casing with drill pipe in the hole. Tubing with packer will be landed by the pressure control method. The partnership has rigged up to drill Jack 6-A-29, C SW SE 29-24s-37e. Repollo Oil Company has spudded State 4-D-157, NW NE SE 12-22s-36e, southeast outpost for the prolific lime area between the Penrose and Eunice fields.

Offsets Required

A west outpost for the mid-section of the Lovington pool has been started, L. H. Wentz et al's State 1-A, C SW SW 36-16s-36e, making 3 active operations. The 11 oil producers require more than a dozen direct offsets that must be drilled soon. Sinclair-Prairie Oil Marketing Company is providing a market outlet for all wells, with the oil being handled by The Texas-New Mexico Pipe Line Company.

Broadening of the Monument field to the east offered greater possibilities when Continental Oil Company et al's Britt 7-B-15, near C W½ SE SW 15-20s-37e, flowed 25 barrels of oil hourly through ¾-inch tubing choke for 7 hours at 3864 feet, or 305 feet subsea. Saturated zone at 3780-3864 feet was given a two-stage treatment with 3000 gallons of acid.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Chaves County (Wildcat)—		
Anderson et al, Warnock 1, c sw se 17-15s-27e	*	1965
Eddy County (Wildcat)—		
Price et al, Massie 2, se se nw 22-19s-29e	*	3082
Eddy County—		
Grayburg Oil Co., Burch 12, nw nw se 19-17s-30e	175	3220
Lea County (Eunice)—		
T. P. Coal & Oil Co., State 17-A, c se se ne 11-22s-36e	720	3790
Lea County (Hardy)—		
Aloco Oil Co., Carson-Gulf 3-B, nw ne 33-21s-37e	288	3760
Lea County (Maljamar)—		
Cockburn et al, Baish-Maljamar 2-B, c ne ne 27-17s-32e	307	4001
Lea County (Mattix)—		
Addison Oil Co., Knight-Gulf 4, c se nw 27-24s-37e	715	3533
Lea County (Monument)—		
Phillips, Britt-Hobbs 4, c se sw 18-20s-37e	832	3865
Lea County (Vacuum) —		
Drl. & Expl. Co., State-Shell 1-O, ne nw ne 34-17s-34e	205	4641
Magnolia, State-Bridges 35, c ne sw 26-17s-34e	256	4712
Lea County (Wildcat)—		
Magnolia, State 1-S, c ne sw 34-16s-34e	*	5690

*Failures; †Junked; ¶Million cu. ft. gas.

California

Large field indicated in San Joaquin Valley

Los Angeles.—Indication that a new field, perhaps 6 miles in length, has been discovered along the floor of the San Joaquin Valley is seen in the two recent strikes just recorded by Standard Oil Company of California.

Standard's KCL 12-6, wildcat situated in the center of Section 30-29-26, Greeley field, discovered a deeper productive zone when it produced at the rate of 1180 barrels of 35.8 gravity oil per day from 11,942 feet, the Vedder zone. The fact that only a drill-stem test was made is indicative that it might do better on a potential test.

The other discovery of Standard occurred in the Richfield-Western-Tupman area when KCL-21-1, Section 19-30-25, uncovered more than 40 feet of oil sand below 9400 feet. This well is 4 miles north of the spectacular "gasoline" gusher brought in earlier at Greeley.

Links Fields

Both wells demonstrate that Coles Levee and the Tupman-Western field are part of the same field, the structure being a shore line deposit more than 6 miles long. Standard's KCL 21-1 is 1½ miles west of Elk Hills field, and it is believed possible that the shore line continues west along the foot of Elk Hills for at least 12 miles. Richfield Oil Corporation, Ohio Oil Company, Union Oil Company, and Tide Water Associated have leased properties close in to both discoveries.

Since the discovery of Ten Section field, Kern County, in June, 1937, 10 fields have been discovered in the county. Some think there now is reason to believe San Joaquin Valley overlies an exceptionally large underground reservoir of oil at varying depths and that with the advent of deep well drilling, wider prospects have been opened.

Kern County is leading the state's development program. All the recent discoveries may be attributed to the drilling of the world's deepest hole at Wasco. The county also has 300-foot wells, wells capable of flowing 54 gravity oil and others producing 10 gravity oil. There are rotary and cable-tool rigs alike; hard formations are encountered at North Belridge and soft formations found in mid-valley; there are both land and marine operations.

Must Build Levee

Due to the high water in Buena Vista Lake, Richfield Oil Corporation and Shell Oil Company have been obliged to construct derricks over water. Ordinarily the area is bone dry. However, Shell's proposed well, BVA 45-9, cannot be drilled until a half-mile levee is completed to well site. The test will search for a shoreline deposit similar to that at Coles Levee on the other side of the lake. Richfield is completing rig foundation for BVA 81-36, Section 36-31-25, at Buena Vista.

Indian lease sales

Sale of 16 tracts of Indian lands will be sold through sealed bids at the Shawnee Indian Agency, Shawnee, Oklahoma, July 15.

Preparations for another auction of Osage County leases will be started July 17 when prospective buyers will meet with the Osage tribal council in Pawhuska to suggest tracts for the sale. Date of the auction will be announced later.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (East Coyote)—		
Tide Water Associated, Anaheim 54	131	3630
Orange County (Huntington Beach)—		
Southwest Exploration, State 16	71	4530
Los Angeles County (Montebello West)—		
Kern, Eggleston 2	110	7161
Pongrantz Petroleum	410	7641
Los Angeles County (Torrance)—		
D. W. Elliott, Kettler 8	85	5190
Los Angeles County (Wilmington)—		
Long Beach Dev. Co., "X"(LB) 8	283	3865
"X"(LB) 9	282	3850
"Y"(LB) 4	268	4000
Oakes & Combs, LBHD (LB) D-5	1100	3925
Signal, Signal-LB-PD (LB) 4	750	4225
Sunray, Gilmore 842-2	240	5775
Kern County (Arvin)—		
Universal Consolidated, Universal-Derby 2	2800	6119
Kern County (Trico)—		
Standard, Tulare Farms 2-3	¶16	2466
Fresno County (East Coalinga Eocene)—		
R. S. Lytle, No. 48-7F	1961	7572
Kings County (Kettleman N. Dome)—		
K.N.D.A., No. a-20Q	2934	7700
Ventura County (Shiells Canyon)—		
Texas Co., Shiells 137	628	3272
Ventura County (Ventura Avenue)—		
Shell, Taylor 100	813	5600
Tide Water Associated, Lloyd 84	330	7325
Kern County (Mt. Poso)—		
Etienne Lang, S.P. 2	*	1565
Kern County (Midway Sunset)—		
Jerome Bihl, Birch-Royer 2	*	3710
Santa Barbara County (Goleta)—		
General, More 4	*	4757

*Failures; †Junked; ¶Million cu. ft. gas.

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GARLOCK

Michigan Fields

Traverse well extends Walker field southeast

Mt. Pleasant, Mich. — Extended a mile northwest last week, the Walker field, Kent County, again was extended this week ¼ mile by C. A. Welch's P. M. Railroad 1, NE NW SW, Section 3-6n-12w, Wyoming Township, which initialed 432 barrels natural and stepped up to 46 barrels per hour with a 2000-gallon acid treatment. The well, ¼ mile east of Pyramid Oil Company's Stiles extension producer, is flowing from Traverse limestone at 1750 feet.

Acid treatment was slated this week for Smith Petroleum Company and Strom-Wagners' Wisniswski 1 wildcat, Section 27-7n-13w, Tallmadge Township, Ottawa County, 4 miles west of production in Walker-Kent field. The Ottawa wildcat is pumping between 9 and 12 barrels per day natural from Traverse at 1894 feet. The area is about 60 percent under lease to the developers. Swanson Consolidated Oil Company and Wolverine Natural Gas Company have scattered acreage and Gulf Refining Company is represented with checkerboarded holdings.

Voorhees Drilling Company deepened Cummings 1, SE SW SE, Section 30-7n-12w, Walker Township, Kent County, from 1865 to 1867 feet and increased natural oil production from 33 to 47 barrels per hour and gas from 5 to 6 million feet per day. Fourteen locations had been staked, five wells spudded and seven other locations tentatively made this week as a result of the extension, which is just under a mile northwest of the previously developed Walker field.

An old subdivision, platted about 15 years ago, flanks the extension lease with the result that 2½- and 5-acre lease tracts are numerous. More lease dealing, ranging in prices up to $200 an acre and overrides from a 1/16 to ⅛, were reported as a result of the Voorhees extension than any previous time in the Kent play.

Rex Oil and Gas Company gave the City of Grand Rapids a ⅜ royalty override for a 22-acre tract, reported the stiffest override in the play's history. No cash was involved, however.

Gordon Oil Company negotiated a lease on a 200-acre tract owned by U. S. Gypsum Company at an undisclosed price and was believed to have the inside track on 430 acres, semi-proven, owned by Certainteed Products Company. The latter two companies and Grand Rapids Plaster Company own around 900 acres in proven or semi-proven territory, all of which operators have been attempting to lease since the play opened. The 900 acres is part of the land purchased by the companies originally for gypsum mining. Part of it has been worked. The gyp mines are shaft mines about 100 feet below the surface. The gypsum beds lay on top of the Marshall sand formation.

Special drilling requirements were being worked out this week by the State Geological Survey for tests drilled in the gyp mine districts. It is probable that any tests drilled in the mine areas or in close proximity will have to be specially cased and cemented to avert encroachment of gas or water into the mines, which are still highly valuable. Operators estimated that special casing and cementing requirements will raise the cost of drilling in the mine areas from 25 to 40 percent above the field average of $11,000.

Rotary drilling probably will be recommended, but not made mandatory, an official of the Geological Survey said.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Redman Oil Co., Steffes 1, sw se nw 1-4n-13w	*	1720
Socony Vacuum, Norgarad 3, ne nw sw 2-4n-13w	115	1690
American Drlg. Co., Loew 2, nw se ne 3-4n-13w	*	1694
Robt. Bond, Calkins 1, nw se se 5-3n-11w	*	1777
Arenac County—		
W. E. Ross, Crandall 1, c se se 10-20n-4e	¶10	1196
Weber Oil Co., Dodge 3, sw se sw 4-20n-4e	150	2578
Barry County—		
Perrine-Sheperds, Clark 1, nw nw se 22-2n-8w	*	1930
R. L. Stoddard, Detzer 1, sw ne nw 3-4n-10w	*	1991
Berrien County—		
Sprenger Bros., Herwig 1, c e e sw 10-4s-18w	*	2711
Clare County—		
Gulf, State 4, c n nw sw 28-19n-6w	1050	3870
Taggart Bros., Gilmore 9, c se 14-18n-6w	¶12	1512
Isabella County—		
Pure, Embrey B2, c s nw nw 3-14n-6w	100	3700
Kalamazoo County—		
Twin Dr. Co., Unemployment Corp. 1, c nw sw 32-1s-10w	*	1690
Kent County—		
Century Oil Co., Bergman 1, se ne sw 33-7n-12w	760	1778
Smith & Wagners, Gilbert 3, ne se nw 4-6n-12w	700	1788
Wolverine Nat. Gas Co., Johnson 7, nw nw nw 4-6n-12w	1200	1768
McGerry, Inc., Lickiewicz 1, ne ne ne 6-6n-12w	350	1903
Hogan & Crydens, Gravel Co. 1, sw ne sw 3-6n-12w	45	1815
C. A. Welch's R. R. 1, ne nw sw 3-6n-12w	900	1750
Van Buren County—		
Blood & Hendershotts, Jackson 2, se ne ne 29-2s-16w	*	2551
Mich. Cities, Strong 4, nw ne ne 11-1s-15w	50	1179
Daily Crude Oil Co., Teal 4, ne ne nw 12-1s-15w	30	1187
Universal Oil Co., Poth 1, ne ne nw 13-1s-15w	760	1195
Rau & Shines, Root 1, ne ne se 34-1s-13w	*	1306
Rowmor Corp., Kuhn 1, se nw ne 36-1s-17w	*	1176

*Failures; †Junked; ¶Million cu. ft. gas.

Swanson claims prorating old completions unfair

Mt. Pleasant.—Swanson Consolidated Oil Company has filed an appeal for a hearing before the State Conservation Commission asking for revocation of an order by P. J. Hoffmaster, supervisor of wells, which prorates wells drilled prior to the 1939 Oil Conservation Act on an acreage factor. The appeal charged the order was unreasonable and threatened irreparable loss to company properties.

The oil act sets up the State Conservation Commission as an appeal board from Hoffmaster's orders. Eleven of 61 producing wells in Walker-Kent field were reported shut in this week as pipe lines refused to run oil in violation of Hoffmaster's tender order of last week. State officials said they believed operators were meeting proration requirements nearly 100 percent, although lack of funds and personnel prevented more than cursory policing of field.

Rocky Mountains

Second Sundance "high" is proven for Lance Creek

Casper, Wyo.—A second Sundance structural high on Lance Creek anticline and from 2 to 3 miles east of the east boundary of the Sundance participating area in the western sector of the field appears to be a certainty, as Continental Oil Company this week completed its important east end Sundance producer and had 3 other wells in the near vicinity, heretofore considered only prospective for Leo sand completion, showing for production in the Basal Sundance.

Continental's Rodeo 6-OPC-4, NW NE 35-36n-65w, completed for 17 barrels per hour from the Basal Sundance at 4072 feet, casing point for the 6⅝-inch string, with hole bottomed in sand at 4090 feet. The well is 2¼ miles east of the Sundance participation boundary.

A little over a mile to the southeast and midway between the outpost Sundance wells and the boundary, Continental's Tom Bell 16, NW SW SW 34-36n-65w, swabbed 91 barrels the first 24 hours and was testing and cleaning out from the Basal Sundance at 3948-3987 feet. The company's Apex 4-OPC-3, NW NE SW 34-36n-65w, swabbed 150 barrels in the first period of testing from the Basal Sundance at 4073 feet and was rigging up pumping equipment. The east Sundance high at Lance Creek apparently covers about 3 sections on the east end of the field and will mean the drilling of approximately 50 additional Sundance wells as current spacing of one to the 40.

In the same sector, a southeastern edge well, Continental's Tom Bell 15, CSE SW SW 34-36n-65w, drilled to 5293 feet this week and abandoned in Bell sand. This well failed to get oil in either the Basal Sundance or the Leo and apparently draws a sharp line of limitation to the East Sundance pool on the southwestern side. It offsets the Tom Bell 16 to the south and the Apex-OPC-3 to the east and south.

New Depth Record

A new Rocky Mountain depth record was established this week by Continental Oil Company, California Company and Amerada Petroleum Corporation's David Miller 1, SW SW NW 36-8s-91w, which went to 10,815 feet and plugged and abandoned without reporting an oil or gas show. The wildcat located in the rugged mountainous area of Mesa County, northwestern Colorado, on the Divide Creek structure, has the highest elevation on record of any well, 9325 feet.

Mountain States Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
Toole County (Kevin-Sunburst field)—		
Big West Oil Co., Dahlquist 10, ne sw se 21-34n-3w	300	1765
Glacier County (Cut Bank field)—		
A. R. Pardue, Tribal 2—170, nw sw sw 7-32n-5w	150	2900
WYOMING		
Niobrara County (Lance Creek field)—		
Continental, Tom Bell 15, cse sw sw 34-36n-65w	*	5923
Minnelusa Oil Corp., Marline-Unit 1, nw sw sw 4-35n-65w	510	5517

*Failures; †Junked; ¶Million cu. ft. gas.

WILDCAT REPORT
New Starts and Completions

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	3	...	1	...	...	...	...	...	1
Arkansas	...	18	...	14	...	1	...	...	...	13
California	4	135	1	67	...	20	1	2	...	45
Colorado	1	1	...	1	...	...	...	...	...	1
Florida	...	1	...	1	...	...	...	...	...	1
Georgia	...	3	...	1	...	...	...	...	...	1
Illinois	28	330	27	242	...	18	...	...	27	224
Indiana	...	20	2	20	2	8	...	1	...	11
Kansas	10	148	9	127	2	44	...	4	7	79
Kentucky	...	11	...	13	...	7	...	...	...	6
Louisiana	2	72	4	56	1	10	...	...	3	46
North Louisiana	...	23	...	16	...	3	...	...	...	13
South Louisiana	2	49	4	40	1	7	...	...	3	33
Michigan	9	125	6	177	...	15	...	...	6	162
Mississippi	3	8	2	5	...	...	...	...	2	5
Missouri	...	24	...	1	...	...	...	...	...	1
Montana	...	2	...	2	...	...	...	...	...	2
Nebraska	1	...	...	...	...	...	...	...	...	...
New Mexico	...	22	3	13	...	1	...	1	3	11
New York	...	...	...	3	...	1	...	1	...	1
Oklahoma	3	102	6	105	1	14	...	5	5	86
Ohio	...	4	1	8	...	1	...	...	1	7
Pennsylvania	...	3	...	2	...	...	...	...	...	2
South Dakota	...	1	...	...	...	...	...	...	...	...
Texas	19	608	38	645	3	66	1	10	34	569
East Texas	3	73	4	56	...	3	...	1	4	52
North Texas	4	85	9	136	2	23	...	1	7	112
Gulf Coast	2	64	3	53	...	5	...	1	3	47
Panhandle	1	7	...	6	...	...	...	...	...	6
South Texas	5	254	10	278	...	21	1	6	9	251
West Texas	4	125	12	116	1	14	...	1	11	101
Utah	...	1	...	...	...	...	...	...	...	...
West Virginia	...	2	...	1	...	...	...	...	...	1
Wyoming	1	4	...	1	...	...	...	...	...	1
Total United States	81	1650	99	1513	9	206	2	24	88	1283

CALIFORNIA

FIRST REPORTS

Kern County—Amerada's S.P.L. 5-17, lcn 330 ft s 330 ft e w¼c 17-19-16, Coalinga area.

Kern County—Shell's B.V.A. 45-9, lcn 2255 ft n, 2325 ft e swc 9-32-25, Buena Vista area. Shell's Ohio-KCL A-82-12, lcn 2958 ft n 10,265 ft e nwc 14-30-25, Strand area.

Ventura County—Bolsa Chica Oil Corp's Snow 5, lcn 350 ft s of Snow 2, 210 ft wly grant line, Sec 4-4-18, Piru area.

COMPLETIONS

Sutter County—Buttes Oilfields, Inc., No. 5, 2050 ft n 875 ft swc 1-15n-1e, td 5455 ft, 8⅝-in csg 5250 ft, completed flowing 22,500,000 cubic feet gas—top Ione 3006 ft, Marysville Buttes area.

COLORADO

FIRST REPORTS

Boulder County—Continental Oil Co.'s Borra 1, se ne sw 5-1s-69w, El Dorado structure, will drill with rotary tools to Hygiene sand at around 5800 ft.

ILLINOIS

FIRST REPORTS

Brown County—E. E. Gold et al's H. Hopke 1, ne nw nw 9-1n-4w, Pearidge tnp, shut down 160 ft.

Clay County—J. W. Leonard's C. O. Raley 1, w nw se 13-3n-7e, Stanford tnp, moving in.

Clinton County—Elmer Goldschmidt's Burger 1, ne ne nw 12-2n-4w, Breese tnp, dr.

Donough County — DeKalb Synd.'s J. F. Welch 1, sw nw 19-6n-2w, dr.

Edwards County—Longoria et al's R. S. Severns 1, sw nw nw 18-1s-10e, Shelby tnp, dr. Ohio's Ben Edge 1, c sw sw se 22-2s-10e, Albion tnp, loc.

Fayette County—Gulf's Smail 1, ne ne se 26-6n-2e, Otego tnp, loc.

Jackson County—M. C. Trumbull's H. Bennett 1, c n nw ne 2-9s-5w, Degonia tnp, dr 355 ft.

Jefferson County—Gill et al's Bates 1, ne nw ne 18-1s-1e, Grand Prairie tnp, moving in material. Magnolia's M. C. Doris, ne nw se 22-3s-2e, McClellan tnp, dr.

Lawrence County—Hutchinson's R. L. Patton 1, c ne nw nw 34-3n-12w, Dennis tnp, dr. Mark et al's Clapp 1, sw se se 8-4n-10w, Russell tnp, dr.

McDonough County—DeKalb Hybrid Seed Co.'s J. F. Welch 1, sw sw nw 19-6n-2w, Macomb tnp, dr.

Marion County—Bootem, Smith & Lundly's John Vursell 1, Section 31-2n-3e, Stevenson tnp, 5 miles east of production in Lake Centralia-Salem pool, spudding.

Morgan County—Underwriter Oil Synd.'s W. H. Diller 1, se se ne 13-13n-9w, Franklin tnp, sd 640 ft.

Perry County—Pres Cochrane's Geaconno 1, nw nw nw 34-4s-3w, Pinckneyville tnp, moving in.

St. Clair County — Tanner & Melburne's Miller Estate 1, sw se ne 29-2s-7w, Athens tnp, shut down 1451½ ft. W. B. Greer's Fullmer 1, se se ne 27-2s-7w, Athens tnp, sd 220 ft.

Schuyler County—Lincoln Bancroft's Plummer Long 1, se 28-1n-2w, Woodstock tnp, dr. Feldheimer & Miller's Issacs Vedemayer 1, sw ne se 2-3n-3w, Brooklyn tnp, dr 100 ft. Harry M. Miller's F. Fellheimer 1, sw ne se 2-3n-3w, Brooklyn tnp, dk.

Washington County—Ed Robinson et al's Brinkman 1, c nw nw se 12-2s-4w, Plum Hill tnp, sd 1190 ft.

Wayne County—Cuyuna Corp.'s Caldwell 1, c e ne sw 3-1s-8e, Jasper tnp, dk. Hayes & Snydle's Murphy 1, c nw nw ne 6-3s-9e, Leech tnp, dk. White Way Oil Co.'s Sherman Walker 1, ne se se 8-3s-9e, Leech tnp, dr. Evan Davis' Fuse Littel 1, ne 17-3s-9e, dr.

White County—Superior Oil Co.'s S. Stum 1, c sw sw 15-5s-14w, Hawthorne tnp, dr 2090 ft.

Williamson County—Reece & Roberts' Tom Arnold 1, c nw ne 21-10s-4e, rig.

COMPLETIONS

Christian County — Klerbolker & Heldt's (Heldt's) G. T. Smith 1, se se se 10-13n-1w, May tnp, top Ste. Genevieve 1170 ft, abnd 1185 ft.

Clark County—Stricker et al's O. E. Tarman 1, nw nw nw 13-9n-13w, Orange tnp, abnd cellar and pits.

Clay County—Dick Burnett's Cyrus Liggett 1, sw ne se 17-5n-5e, Larkinsburg tnp, top Ste. Genevieve 2378 ft, abnd 2445 ft. Riley et al's Smith 1, nw ne nw 21-5n-5e, Larkinsburg tnp, top Aux Vases 2331 ft, abnd 2340 ft. Minerva Oil Co.'s John Smith 1, sw sw nw 23-5n-5w, Larkinsburg tnp, abnd 2474 ft in Ste. Genevieve.

Coles County—Marvin et al's J. H. Bell 1, sw se se 28-12n-7e, Mattoon tnp, top St. Louis 2295 ft, abnd 2318 ft.

Cumberland County — Manitou Petroleum Co.'s W. Wilcox 1, nw nw ne 20-10n-10e, Union tnp, abnd after spudding.

Fayette County — Giffert Drilling Co.'s Gawer 1, se nw ne 25-6n-2e, Otego tnp, abnd 1615 ft in Cypress.

Gallatin County—J. G. Buell's Egyptian Lumber Co. 1, c n nw se 16-8s-10e, New Haven tnp, top Ste. Genevieve 2700 ft, abnd 2960 ft. McCarter's Logan 1, c e sw ne 20-9s-9e, Gold Hill tnp, abnd 1808 ft in Vienna lime. B. A. Skipper's (Byron Glascoe's) Williams 1, sw ne se 20-9s-9e, Gold Hill tnp, abnd after rigging up. R. F. Jackson's McGhee 1, sw ne ne 29-9s-9e, Gold Hill tnp, abnd loc.

Jefferson County—Kingwood Oil Co.'s C. E. Cook 1, c w se sw 18-3s-4e, Pendleton tnp, top St. Louis 3194 ft, abnd 2304 ft.

Lawrence County—Jordan's Dalhan 1, c se sw 32-5n-11w, Bond tnp, abnd after spudding.

Madison County—Lambert et al's Brookmeyer 1, sw nw ne 8-3n-8w, Collinsville tnp, top Niagaran 1300 ft, abnd 1394 ft. Dr. E. L. Loper's F. Keller 1, sw sw nw 8-3n-8w, Collinsville tnp, top Devonian-Silurian 1287 ft, abnd 1368 ft. Paul Moseback's Callahan 1, nw nw nw 17-3n-8w, Collinsville tnp, loc abnd after rigging up.

Monroe County—Crittendon & Noelkemper's Schroeder 1, s½ se ne 14-2s-10w, Waterloo tnp, top Trenton 469 ft, abnd 533 ft.

Moultrie County—Seaboard Oil Co.'s Day Horn 1, sw se ne 29-13n-5e, Sullivan tnp, top Devonian 3039 ft, abnd 3262 ft.

Perry County—Hayes et al's H. & F. Collins 1, se se sw 4-4s-1w, Tamaroa tnp, abnd after rigging up. L. C. Simmel's Kinsey 1, nw ne se 5-5s-1w, Tamaroa tnp, abnd after rigging up.

St. Clair County—Gail et al's A. Schildmicht 1, w½ sw nw 10-2n-7w, O'Fallon tnp, abnd loc. William et al's Columbia Quarry 1, se ne ne 10-1s-10w, Sugar Loaf tnp, abnd in Trenton at 837 ft.

Saline County—Thomas McNear's Miller 1, c nw ne 23-8s-6e, Raleigh tnp, abnd after drilling to 375 ft.

Washington County—Harry Harter's Geo. Flanaus 1, c se sw nw 10-2s-4w, Beaucoup tnp, abnd in Lower Mississippian, 1355 ft. Thompson Drilling Co.'s Rosznowski 1, nw nw sw 19-3s-2w, Dubois tnp, abnd in Cypress 1267 ft. Brown & King's Stawicki 1, se sw se 17-3s-2w, Bolo tnp, abnd loc.

Wayne County — New Penn Development Co.'s J. E. Baker 1, c se nw nw 21-2s-9e, Leech tnp, top Ste. Genevieve 3270 ft, abnd 3373 ft.

INDIANA

COMPLETIONS

Gibson County—Al Walker & Bruce Martin's O. Schmidt 1-A, se se sw 13-3s-9w, Barton tnp, top Pottsville 951 ft, pumped 70 bbls in 24 hours, td 961 ft.

Spencer County—Damron Bros.' Effie Miller 1, ne ne ne 2-8s-7w, Luce tnp, good for 100 bbls a day and believed to be the state's first commercial production from the Aux Vases, td 1510 ft.

KANSAS

FIRST REPORTS

Cowley County—Phillips Petroleum Co.'s Glantz 1, sec ne 3-31s-3e, rur. Gralapp et al's Clark 1, nwc ne 11-31s-3e, otd 3248 ft, to dd.

Franklin County—Snyder et al's Feeler 1, swc nw 27-15s-20e, ru machine.

Jackson County—Haun et al's Ernst 1, nwc sw 6-8s-16e, rur.

Jefferson County—Continental Oil Co. et al's Benidge 1, nwc sw 8-9s-17e, lcn.

Johnson County — Sagamore O&G Co.'s Smith 1, c w½ se se 16-14s-22e, dr.

Rice County—O-Kansas Drilling Co. et al's Shonyo 1, swc ne 34-18s-9w, rur. Vickers Petroleum Co.'s Rodenbert 1-A, cnl nw 8-18s-, 10w, rur.

Sedgwick County—Parks' Fisher 1, nwc ne 25-26s-1e, rig.

Sumner County—Palmer's Lawson 1, swc se 9-35s-2e, rur.

COMPLETIONS

Barton County—Broswood Oil Co. et al's Rude Estate 1, nw sw ne 2-16-13w, south Sellens pool, top Lansing 3103 ft, conglomerate 3350 ft, top Arbuckle 3370 ft, hfw 3384-88 ft, abnd.

Butler County—Elbar Oil Corp.'s Martin 1, ne se se 34-26s-7e, s Young pool, top Mississippi 2680 ft, abnd 2735 ft.

Cowley County—Hartman et al's Brown 1A, sec nw 33-30s-4e, between Clark and S. David pools, top Arbuckle lime 3284 ft, td 3286 ft, completed, 612 barrels.

Ellis County—Nelson's Novak 1, nwc ne 36-13s-16w, w of Gorham pool, top Arbuckle lime 3415 ft, abnd 3420 ft, hfw.

Harvey County—W. Kansas O&R Co. et al's Mooreshead 1, swc 24-23s-1w, w Newton, top Arbuckle lime 3591 ft, abnd 3639 ft.

Johnson County — Sagamore Oil and Gas Co.'s Squires 1, se sw sw 16-14s-22e, west Gardner, sand 925-32 ft, abnd 985 ft.

Rice County—Jones' Habiger 1, nec sw 9-18s-10w, top Lansing 2948 ft, top Arbuckle lime 3275 ft, so 3285-90 ft, hfw 3292-95 ft, abnd. Carey Oil Co. et al's Link 1, sw nw se

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THE FORT WORTH LABORATORIES
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19-19s-9w, w Chase pool, top Arbuckle lime 3267 ft, acidized 2000 gals, td 3291 ft, pumped 291 bbls, completed. Bridgeport Machine Co.'s Pierce 1, c sl n½ ne 29-20s-7w, n Wherry pool, top Simpson 3635 ft, hfw 3635-40 ft, top Arbuckle lime, abnd 3703 ft.

Stafford County—Stanolind's Sittner 2, ne sw sw 3-22s-12w, w S. Sitner pool, top Arbuckle lime 3630 ft, acidized 1500 gals, td 3635 ft, pumped 399 barrels, completed.

SOUTH LOUISIANA

FIRST REPORTS

Plaquemines Parish—Texas Co.'s State 1, Bastian Bay area, 750 ft n, 2750 ft e swc 43-20s-28e, in Bayou Fontanelle, lcn.

Terrebonne Parish—Texas Co.'s State Coon Point 3, Coon Point prospect, n 50 degrees, 29 minutes, w 10,268 ft from government tri station, Coon Point, and n 74 degrees 30 minutes e 5800 ft from State 1 in 23s-14e, lcn.

COMPLETIONS

Assumption Parish—Shell's Ells 1, Amelia prospect, 467 ft n and 127 ft w of sec of sec 66-14s-14e, abnd 11,610 ft.

Allen Parish—Bel Oil Co.'s Bel Estate 1, center of se¼ ne ¼ of sec 22-6s-3w, dr to 9010 ft, pb and made series of tests and finally comp. through perforations at 7272 to 7292 ft, 20 bbls 55 gravity distillate and 1,500,000 cubic ft gas daily.

Evangeline Parish—Continental's Manuel 1, Reddell prospect, 2040 ft se along ne line of sec 33 from n cor, thence 580 ft se at right angles in sec 33-4s-1w, dr to 11,341 ft, pb and tested 9885 ft, rec salt water, abnd.

Jefferson Davis Parish—Robert M. Bleakie's Lock Moore Lbr. Co. 1, Fenton area, 300 ft n and 300 ft e of center of sec 29-7s-6w, abnd 7510 ft.

MICHIGAN

FIRST REPORTS

Allegan County—McKenna & Mees' Balch 1, se sw ne 19-2n-15w, rig.

Barry County—D. F. Jone's Smith 1, sw nw sw 9-1n-8w, dr.

Berrien County—J. D. Mathews' Fee 1, nw nw nw 5-7s-17w, lcn. J. J. Olson's Fee 1, ne nw nw 12-5s-18w, rig.

Clinton County—Clinton Pet. Co.'s Loesch 1, se sw sw 18-5n-2w, rig.

Gladwin County—Wicklund Dev. Co.'s Lennon 1, ne sw 12-19n-1w, dr.

Kalamazoo County—Turner Pet. Co.'s Andrews 1, nw nw sw 31-4s-12w, dr.

Ottawa County—R. A. Hill's Hunter 1, sw ne sw 25-5n-13w, rig.

Van Buren County—Turner Pet. Co.'s Lee 1, sw nw nw 25-4s-13w, rig. M. M. Rozan's Lulu 1, nw sw ne 34-2s-14w, dr.

COMPLETIONS

Allegan County—Robert Brond's Calkins 1, nw se se 5-3n-11w, abnd, Traverse, td 1777 ft.

Barry County—Perrine-Shepherd's Clark 1, nw nw se 22-2n-8w, abnd, Traverse, 1930 ft. R. L. Stoddard's Detzer 1, sw ne nw 3-4n-10w, Traverse 1955 ft, so 1957-59 ft, water 1986 ft, abnd 1991 ft and abnd.

Berrien County—Sprenger Bros.' Herwig 1, c e e sw 10-4s-18w, abnd 2711 ft.

Kalamazoo County — Twin Drilling Co.'s Unemployment Corp. 1, c nw sw 32-1s-10w, abnd 1690 ft.

Van Buren County—Rau & Shines' Root 1, ne ne se 34-1s-13w, abnd 1306 ft.

MISSISSIPPI

FIRST REPORTS

Issaquena County — Ryan & Anderson's State 1, located 600 ft north and 400 ft e of swc 36-12n-8w, rig.

Yazoo County — Union Prod. Co.'s G. C. Woodruff 1, located 1320 ft n of south line and 660 ft east of west line 13-10n-3w, rig.

Lamar County—Ira H. Larr, Simmons 1, nec se nw 32-3n-14w, pits dug.

COMPLETIONS

Calhoun County—L. C. Lucas, E. C. Boland 1, 9-22n-9e, abnd 794 ft.

Clarke County—J. L. Ryan et al's M. Eddins 1, 29-2n-14e, abnd 1502 ft.

NEBRASKA

FIRST REPORTS

Dawes County — Huber Petroleum Co.'s State 1, sw ne 16-33n-51w, mirt. Location in Whitney area of western Nebraska.

NEW MEXICO

COMPLETIONS

Chaves County—Mac T. Anderson et al's Warnock 1, c sw se 17-15s-27e, elev 3382 ft, abnd in sul w 1960-65 ft.

Eddy County—C. V. Price et al's Massie 2, se se nw 22-18s-29e, elev 3457 ft, top salt 355 ft, trace oil 3015-21 ft, no water, abnd 3082 ft.

Lea County—Magnolia Pet. Co.'s State 1-S, c ne sw 34-16s-34e, elev 4090 ft, top anhydrite 1640 ft, top brown lime 4886 ft, top gray lime 4951 ft, trace o&g 4667-70 ft, salty water 5085-92 ft, abnd in sul w 5314-5690 ft.

OHIO

COMPLETIONS

Adams County—Tira Syndicate's Thomas Tira 1, Franklin tnp, north of Potato Knob, top Trenton 1462 ft, top St. Louis 2135 ft, abnd 2165 ft.

OKLAHOMA

FIRST REPORTS

Creek County—Selby Oil & Gas Co.'s Moore 1, se ne sw 36-16n-7e, rur.

Kay County—Marland's Crook 1, swc se 21-26n-3e, dr.

Kiowa County—Lewis et al's Ford 1, nec se 14-7n-18w, dr.

COMPLETIONS

Grant County—Carter Oil Co.'s Staggers 1, c w½ se nw 4-25n-3w, north Lamont pool, top second Wilcox 5270 ft, abnd 5528 ft.

Hughes County—Continental Oil Co.'s Hudson 1, sec 8-4n-9e, between Citra and Allen pools, top Hunton 5666 ft, top Sylvan 5718 ft, top Viola 5818 ft, top first Wilcox 6312 ft, abnd 6333 ft.

Kiowa County—Beckett's Standerfer 1, nec 25-7n-18w, 2½ mi e Hobart, missed Viola, abnd 1225 ft.

Kay County—Tide Water's Kelle 1, sec ne 27-28n-1w, west Blackwell pool, top Mississippi 3400 ft, top Wilcox 3484 ft, top Arbuckle lime 3706 ft, abnd 3706 ft.

Pittsburg County—Phillips Petroleum Co.'s Hubacker 1, c nw ne 11-7n-15e, sw Crowder, top Wilcox 7514½ ft, top Oolitic 7572 ft, top McLish 7649 ft, abnd 7731 ft.

Seminole County—Culver et al's Burton 1, sw nw se 3-5n-5e, nw Wetley pool, completed top Hunton 2516 ft, 7-inch 2554 ft, Oolitic Hunton 2666 ft, flowed 450 bbls.

SOUTH TEXAS

FIRST REPORTS

Duval County—W. L. Goldston's Hyatt 1, 400 ft s line, 400 ft e line of Sweden farm lot 36 and in Seale and Morris sur 535, lcn.

Guadalupe County—Lincoln Petroleum Co.'s Lowman 1, 510 ft n'ly n line, 1020 ft w'ly w line of 148-ac tr, George Allen sur, rigging up.

Live Oak County—Luling Oil and Gas Co.'s Byler 1, 950 ft sw line, 2590 ft nw line of J. Poitevent sur 95, spudded.

McMullen County—F. H. Gohlke's Miller 2, 220 ft n line, 220 ft w line of blk 10, Holbrook and O'Farrel subd, W. Kohfler survey 78, drilling 550 ft.

Webb County—V. G. Schimmel's Benavides 2, 330 ft n line, 330 ft w line of westernmost portion SK&K sur 713, rigging up.

COMPLETIONS

Jackson County—H. J. Porter's Dodd 1, 330 ft n along w line of E. Beaty survey fr sw cor, thence w 330 ft at rt ang, abnd 3503 ft.

Jim Wells County—Gorman and Yoakam's Schmidt 1, 467 ft ne line, 467 ft se line of the sw 217.14-ac of blk 2, Welhausen and Driscoll subd, "Casa Blanca" Juan Jose de la Garza Montemayor and Sons gr, top shells at 5108 ft, abnd 5713 ft. H. H. Howell's Hoffman 1, 330 ft n line, 330 ft e line of w 80-ac of 160-ac tr, comprising reserve townsite of Springfield, section 8, Plummers resubd of Camado Ranch, saturated sand 6860-75 ft, complete 7041 ft, estimated 2 million cubic feet spray dist. ⅛-nich choke, 1400 pounds tubing, 1600 pounds casing, perforations 5530-40 ft.

Live Oak County—Sal Vieja Oil Corp.'s Hines 1, 330 ft s line, 330 ft e line of w 80-ac of se¼ section 98, C. F. Simmons farm lots subd, top Cole 1629 ft, top Government Wells 2370 ft, top Pettus 2830 ft, abnd 3507 ft.

McMullen County—Edwin M. Jones' Ezzell 94, 330 ft s line, 330 ft e line of sec 40, Ezzell Ranch subd, S. M. Hodges sur 12, oil sand 1450-58 ft, abnd 2144 ft. C. C. Shumway's Shiner 14, 330 ft w line, 2650 ft s line

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of e½ of e½ of sec 62, C. C. Shumway subd Shiner ranch, abnd 1120 ft.

Nueces County—Mills Bennett Production Company's Poenisch 1, on common line of lot 1 and 16 and 467 ft nw line of blk 14, Flour Bluff Farm and Garden tr subd, Enrique Villareal gr, sand 4750-4880 ft, abnd 7508 ft. E. A. Graham's Taylor 1, 1650 ft s line, 330 ft w line of sec 1, blk 6, Roberts and White subs, Robert Schallert tr of Petronilla Ranch, abnd 6024 ft.

Starr County—R. C. Hillman's Gonzales 1, 282 ft n line, 386 ft e line of sh 232, por 69, abnd 3622 ft.

Webb County—House and Campbell's Longoria 1, 330 ft w line, 247 ft n line of 35-ac lse, sur 692, top Mirando 2482 ft, slight oil show at 2482-90 ft, abnd 2686 ft.

WEST TEXAS

COMPLETIONS

Andrews County — Wm. Hanagan and Richmond Drilling Company's University-Stanolind 1, c sw sw sec 25, blk 12, elev 3325 ft, top anhydrite 1578 ft, base salt 2730 ft, top Yates 2890 ft, top frosted grains 2920 ft, top brown lime 3800 ft, top solid lime 4180 ft, abnd 5005 ft.

Dickens County—Humble's Matador L&C Co. 1, c sw ne sec 26, blk 1, Shock & Arnold sur, elev 2476 ft, top anhydrite 976 ft, top brown lime 2092 ft, top Wichita-Albany lime 2958 ft, top dolomite lime 3770 ft, abnd 7053 ft.

Glasscock County—Shell's A. D. Neal 1, nw nw se T&P sec 38, blk 33, T-3-S, elev 2658 ft, abnd 3683 ft.

Jones County—G. M. Gillespie et al's J. D. Samples 1, c ne nw sec 45, Deaf & Dumb Asylum Lands, top Palo Pinto lime 3020 ft, abnd 3505 ft. Kittery Oil Co. (was J. L. Douglas's) J. M. Blanton 1, 550 ft fr s and 1200 ft fr w lines S. L. Underwood sur No. 1, oil sand 1624-32 ft, shot 20 qts nitro and pumped 53 bbls 35.7 gravity oil initial. Phillips Pet. Co.'s J. R. Montgomery 1, 990 ft fr n and 330 ft fr w lines of m/n/nw corner T&P sec 5, blk 16, dry sand 2140-54 ft abnd 2622 ft. R. H. Roark et al's D. Southard 1, 800 ft fr n and 466 ft fr e lines of southeast 204.2-acre tract, sec 8, Deaf & Dumb Asylum Lands, top Palo Pinto lime 3368 ft, abnd in hfw 3375 ft. S. B. Roberts Co. et al,'s Chas. Herndon 1, 467 ft out of swc MEP&P sec 6, 1½ mi s Anson, water in lime at 2390-95 ft, abnd 2602 ft.

Pecos County—J. L. Greene & Leon Goodman's J. S. Masterson 1, 150 ft fr nw and 990 ft fr sw lines H&GN sec 105, blk 10, elev 2466 ft, sul w and abnd 1524-26 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Coleman County—J. D. Kynaston-Bozeman et al's J. P. McCord 2, 400 ft fr e and 1½ mile fr s lines of J. W. Meeks sur, mim.

Eastland County—J. L. Reeves et al's J. V. Parker 1, 7445 ft fr n and 5650 ft fr w lines Wm. Van Norman sur, machine.

Hood County—D. S. Sowell et al's B. Burton 1, 2500 ft fr ne and 5200 ft fr se lines of L. Campbell sur, dr 2695 ft.

McCulloch County—A. E. McMillan et al's Nat Randall 1, c ne nw sec 146, A. M. Waldrip sur, mim.

COMPLETIONS

Callahan County—Henderson et al's Toland 1, sec 27, blk 5, S. P. Ry. sur, abnd 1190 ft.

Eastland County—Aloco Oil Co.'s J. W. Guy 1, 220 ft out of swc nw nw H&TC sec 23, blk 1, abnd 1601 ft. W. J. Dobbs Oil Corp.'s W. J. Greer 1, 330 ft out of nwc of J. E. Hardy sur, elev 1585 ft, top Caddo 2567 ft, td 3131 ft, pb to 2665 ft and shot 100 qts nitro 2620-60 ft; used 1000 gals acid, pumped 75 bbls oil initial.

EAST TEXAS

FIRST REPORTS

Henderson County—J. V. Scrivenor et al's American Livestock & Feed Co. 1, 900 ft s of n and 900 ft e of w lines of 78-acre tract in w½ blk 14, J. M. Sally survey, 6 mi sw Athens, elev 397 ft, top Pecan chalk 2395 ft, dr 2550 ft.

Limestone County — Zephyr Oil Co.'s H. Peeples 2, 480 ft n and 60 degrees w of Peeples 1, abnd in Woodbine water at 2631-2825 ft, R. Scott sur, 2 mi sw Tehaucanna, Austin chalk 1985-2380 ft, first porosity in Woodbine 2590-94 ft, possibly oil sand, testing in tight sand with show oil at 2645 ft.

McLennan County—M. M. Russell et al's J. B. Lindsey 1, 215 varas ne of sw and 110 varas nw of se lines of 168.11-acre tract, G. H. Roberston sur, nw edge Waco Lake, sp and sd.

COMPLETIONS

Henderson County—Tide Water-Seaboard & Humble's Allie Scott 1, near center of 97.32-acre lease, Cleveland Robb sur, 2½ miles sw of Opelika gas-distillate production, elev 538 ft, Pecan chalk 2734-2990 ft, Austin chalk 3859-4255 ft, top Georgetown 5281 ft, top Paluxy 6640 ft, top Glen Rose 6950 ft, top first anhydrite 7856 ft; top second anhydrite stringer 8305 ft; massive anhydrite 8656-8960 ft, jkd with 4700 ft drill pipe in hole at 9872½ ft.

Limestone County—Zephyr Oil Co.'s Carrie Peeples 1, 800 varas w of m/e/e line and 900 varas s of m/e/n line of R. Scott sur, 1½ miles sw of Tehaucana, elev 487 ft, Austin chalk 2055-2231 ft, top Woodbine sand 2631 ft, abnd in water 2825 ft.

Rains County—McKinley & Hastings' McTaggart 1, 210 ft fr n and 200 ft fr w lines of 21-acre tract, B. Miller sur, 1 mi w Emory, elev 465 ft, top Midway 280 ft, abnd 720 ft.

Rusk County—Hamm-Boggess et al's Ross Bros. 1, 3340 ft fr sw and 150 ft fr se lines of J. McCune sur, 3 mi nw Mount Enteprise, elev 402 ft, top Pecan chalk 2918 ft, abnd in Georgetown lime 3836 ft.

NORTH TEXAS

FIRST REPORTS

Cooke County—John A. Pace et al's J. T. Donald 1, 1650 ft w and 450 ft n of m/e/sec of sec 21, S. P. Ry sur A-971, mim. C. E. Sykes et al's J. T. Rosson 1, 974 ft fr w and 150 ft fr n lines of BBB&C Ry. sur, A-146, mim for 2000-ft test.

Haskell County—P. S. Kendrick et al's T. G. Hendrick 1, 330 ft out of nwc sec 1, AB&M sur, mim for 3250-ft test.

Montague County—J. W. Sorrell et al's J. T. Brown 1, 440 ft out of nwc s½ se¼ sec 58, E. T. Ry. sur or G. E. Nabours sur, 5 mi e by s of Stoneburg, lcn for 5000-ft test.

COMPLETIONS

Archer County—D. H. Allday et al's J. A. Young 1, 150 ft fr w and 1850 ft fr s lines sec 2486, TE&L Co. sur, Gunsight lime 1489-91 ft, abnd 1541 ft. Bert Davis et al's F. M. Power 1, 950 ft fr w and 2000 ft fr s lines John Richards sur A-367, or swc blk 19, Archer City townsite, show oil 1314-16 ft, abnd 1380 ft, Gunsight 1301-03 ft, Young and Bernhard's H. L. Morrison 1, 831 ft fr n and 450 ft fr w lines sec 2403, TE&L Co. sur, o.s. 1289-93 ft, pumped 31 bbls initial.

Cooke County—McDaniel & Beecheral's J. F. Flusche-Texaco 1, 150 ft fr nec of s½ of east 138 acres of J. C. Richards sur, A-886, trace oil 980-86 ft, abnd 1034 ft. J. L. (Jack) McMahon et al's J. F. Flusche-Texaco 1, 165 ft fr n and 150 ft fr e lines J. C. Richards sur A-886, abnd in hfw 1246-57 ft. J. M. Russell et al's Stary-TCU 1, 330 ft fr sec W. A. Lynn sur A-1572, o.s. 1125-43 ft, pumped 109 bbls 30 gravity oil initial.

Jack County—E. B. Fulton et al's J. B. Gillespie 1, 150 ft out of sec of nw 40 acres of 286-acre tract, sec 2, R. C. & W. F. Thompson sur A-2219, abnd 550 ft. Welch-Hill Oil Co.'s G. T. Griffin 1, 400 ft fr n and 2100 ft fr w lines H&GN Ry. sur A-470, abnd 340 ft.

Young County—Rhea Anderson et al's A. E. Hausler 1, 2100 ft fr n and 2000 ft fr w lines sec 1, J. Poitevent sur A-226, abnd 1150 ft.

TEXAS GULF COAST

FIRST REPORTS

Chambers County — Jack Frazier-Windsor Oil Co.'s Tyrell Trust 1, ne of Seabreeze, 1400 ft fr s line and 900 ft fr e line of H. & T. B. No. 97, mim.

Ft. Bend County—Nat Hunter's Settegast 1, Clodine area, 530 ft fr n line and 410 ft fr e line of 20-ac tract being the ne 20-ac of an 80-ac lease, E. P. Whithead sur, lcn.

COMPLETIONS

Brazoria County—Hamman Expl. Co.'s Darrington State Prison Farms 1, Sandy Point area, 1400 ft e of w line and 1400 ft s of n line of 821.75-acre tr, A. McFarland sur, dr to 9120 ft, showed for producer around 8700 and 8300 ft, abnd.

Harris County—Housh & Thompson's Krey 1, Addicks area, 466 ft out of sec block 22, Meadowbrook Farms subd., three mi sw of Addicks, abnd 7828 ft.

Polk County—Jack Frazier-Sinclair Prairie Oil Co.'s Bergman 1, Goodrich area, 900 ft fr se line and 1320 ft fr sw line of 1622-ac tract, A. Viesca sur, abnd 7576 ft.

TEXAS PANHANDLE

FIRST REPORTS

Hartley County—Phillips Pet. Co.'s W. K. Gordon 1, sw sw ne H&TC sec 2, blk 44, mim.

WYOMING

FIRST REPORTS

Sublette County—Wyoming Petroleum Corporation's Government 2, se se se 3-29n-113w, north offset to company's gas well, mirt.

Hercules Declares Preferred Dividend

The Board of Directors of Hercules Powder Company on June 28 declared a regular quarterly dividend of 1½ percent on its preferred stock. The dividend is payable on August 15 to stockholders of record on August 4.

NEW!

Improved Features of O'Bannon Nu-Standard Pump Assure Longer Service and Afford Larger Fluid Capacity.

● **All joints are shouldered straight threads. Straight threads are leak proof, lock against accidental unscrewing, can be used over and over, and keep connected parts always in alignment.**

● **Fluid capacity is greater. Opening through inner tube and plunger is larger. The bore of the 2½" and 3" pumps has been increased over the old Standard Pump.**

● **The Nu-Standard Pump conforms to A.P.I. dimensional standards. This affords complete interchangeability.**

● **Supplied in three sizes: 2" x 1½", 2½" x 2", 3" x 2½"; six lengths: 5, 6, 7, 8, 10, and 12 feet; and with four different plungers: Regular Repack, Eight Cup, Combination, and Discpak.**

● **Gives increased service and fewer rod jobs when equipped with a Cro-Lay barrel—especially in sand or corrosive conditions.**

IN THE ILLUSTRATION

The O'Bannon Nu-Standard Pump with Regular Plunger and plunger standing valve. See pages 16-20 in the O'Bannon Catalog No. 9 for complete description.

SOLD BY SUPPLY STORES

Manufactured by

WALTER O'BANNON COMPANY

TULSA FORT WORTH

O'BANNON

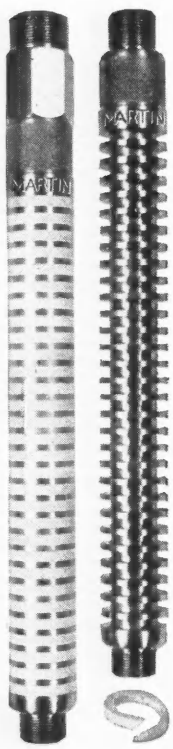
NU-STANDARD PUMPS

NOTES FOR THE Equipment Buyer and User

Pump Plunger

JOHN N. MARTIN, MANUFACTURER

John N. Martin, Manufacturer, 11 W. Brady, Tulsa, Oklahoma, has developed a complete series of sizes of the patented Martin Plunger to fit all sizes of tubing and rod pumps. This plunger differs from all other ring packed plungers in that the body is machined from one piece of metal with no loose spacers or washers. The packing rings are split for mounting in the grooves and the swelling characteristic of the rings is employed to tighten the rings in the grooves and seal up the cuts.



Martin Plungers are made in all sizes from 1-inch diameter to 4¾-inch diameter and in various lengths for different well depths, the minimum recommendation being one ring per 100 feet of well depth of lift. Rings are made in various undersizes to provide the proper working fit for various kinds of well fluid.

The one-piece body construction provides the rigidity necessary in pumping against high heads or pressures and also eliminates any passage for fluid underneath the rings. Among the advantages claimed are long wearing life for the rings, small wear on the working barrel or tube, lighter rod loads and comparatively small initial and upkeep cost.

Slush Pump Liners

HARRISBURG STEEL CORPORATION

A new and exclusive process of controlling the hardness and ductility of seamless steel slush pump liners is announced by Harrisburg Steel Corporation of Harrisburg, Pa. The process was developed at the Harrisburg plant by Dr. T. Holland Nelson, and is known as the "Nelsonizing Process."

Harrisburg liners thus processed possess maximum hardness and wear resistance where it is most desired, yet this hardness is backed up with material in a softer and more ductile condition and there is no sharp line of demarcation between the two, it is claimed.

"The outstanding features of this pump liner," said Dr. Nelson, "are that for almost any desired depth the inner surface can be raised to a Brinell hardness as high as 625, yet the outer surface, for any predetermined depth, can be maintained with a Brinell hardness of from 200 to 250.

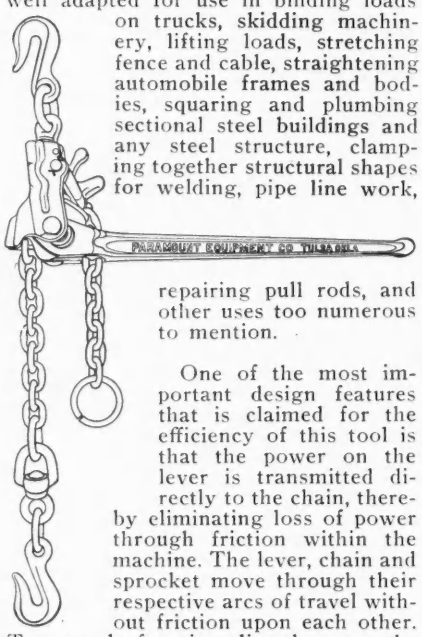
"A cross section of this new liner shows a combination of maximum hardness and toughness unobtainable by any other process. No operation such as metal spraying, alloy insertions, case hardening or other surface preparation is resorted to."

Patent for the process has been applied for and assigned to Harrisburg Steel Corporation.

Lift-Pull Tool

PARAMOUNT EQUIPMENT COMPANY

Paramount Equipment Company, 911 E. First Street, Tulsa, Oklahoma, is introducing their new tool which has been given the trade name "LifTug." It is claimed that this tool can be used to lift or pull in any direction from any position, and that it is exceptionally well adapted for use in binding loads on trucks, skidding machinery, lifting loads, stretching fence and cable, straightening automobile frames and bodies, squaring and plumbing sectional steel buildings and any steel structure, clamping together structural shapes for welding, pipe line work, repairing pull rods, and other uses too numerous to mention.



One of the most important design features that is claimed for the efficiency of this tool is that the power on the lever is transmitted directly to the chain, thereby eliminating loss of power through friction within the machine. The lever, chain and sprocket move through their respective arcs of travel without friction upon each other. Two pawls function directly upon the chain, catching each link in lifting or lowering the load. Due to their design, the pawls lock on the chain under load stress, and can not be released until a lever tension is applied. This feature tends to keep the load under control at all times. The chain will move freely forward when taking up surplus, and by a short movement of the thumb latch, it can readily be restrung to take another hitch. The body is fitted with a universal connection and either slip or grab hook, allowing for quick attachment and free movement in any direction. The tool is designed for stock coil chains of sizes and makes that can be purchased from local dealers in emergencies. "LifTug" is manufactured in six different capacities to accommodate a wide field of uses.

Hard Metal for Valves

McKENNA METALS COMPANY

Oil well pump valves and other valves subject to unusual abrasive or corrosive action are now being successfully made of Kennametal, the new intermetallic compound of tungsten-titanium carbide, maunfactured by McKenna Metals Company, 224 Lloyd Avenue, Latrobe, Pennsylvania. Recent tests indicate that valves made of Kennametal will far outlast valves made of other materials.

Illustrated in Figure 1-A are several high-pressure needle valves, equipped with Kennametal needle tip and seat, which were used in experiments involving a tarry fluid containing grit. Previously it had been necessary to change as many as 7 valves in 24 hours; however, the Kennametal-tipped valves and seats gave such good service that it was necessary to replace every 1 to 2 weeks.

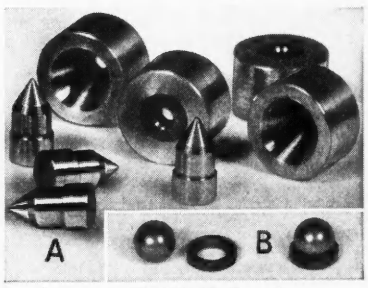


FIGURE 1

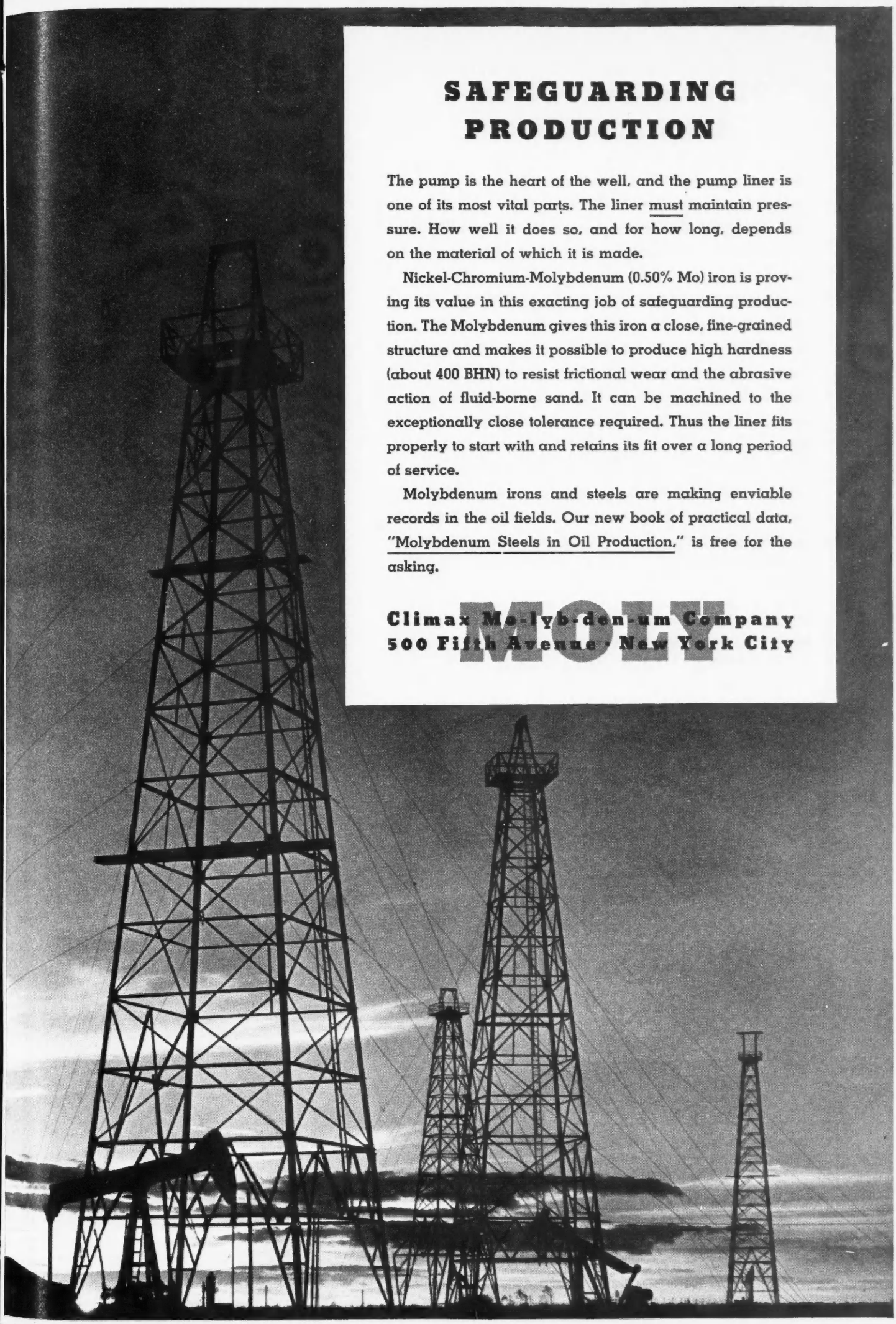
The superior strength of Kennametal balls and seats for oil well pump valves (see Figure 1-B) is demonstrated by tests recently conducted by a large oil well equipment manufacturer. In these tests Kennametal balls were hammered against seats of Kennametal by a pneumatic hammer, using 300 blows per minute of ram, 24 pounds per square inch air pressure and 3/32 inch play between ram and ball and seat. After 105 minutes of hammering, the valves were still serviceable. The Kennametal valves also showed superior resistance to corrosion in the waters of Louisiana oil wells.

Kennametal can be supplied in any desired shape for valve parts and in three grades having varying physical properties.

Welder

THE HARNISCHFEGER CORPORATION

The Harnischfeger Corporation of Milwaukee, announces the new P&H-Hansen Model WA-200 square-frame welder for multi-arc service. Representing the last word in simplicity, compactness, ease in operation, this is a precision-built welder whose design enables it to be built with the practical economies of modern mass production. The WA-200 requires less than 3½ square feet of floor space, offers a



SAFEGUARDING PRODUCTION

The pump is the heart of the well, and the pump liner is one of its most vital parts. The liner must maintain pressure. How well it does so, and for how long, depends on the material of which it is made.

Nickel-Chromium-Molybdenum (0.50% Mo) iron is proving its value in this exacting job of safeguarding production. The Molybdenum gives this iron a close, fine-grained structure and makes it possible to produce high hardness (about 400 BHN) to resist frictional wear and the abrasive action of fluid-borne sand. It can be machined to the exceptionally close tolerance required. Thus the liner fits properly to start with and retains its fit over a long period of service.

Molybdenum irons and steels are making enviable records in the oil fields. Our new book of practical data, "Molybdenum Steels in Oil Production," is free for the asking.

Climax Mo-lyb-den-um Company
500 Fifth Avenue · New York City

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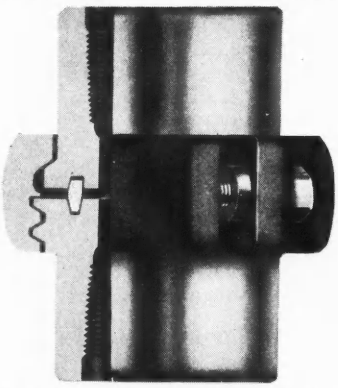
Red-Rex
QUICK-JOINT
PIPE UNIONS



High Pressure Steel Unions—3,000 lbs. and 6,000 lbs. test. Renewable seal ring with three tapered sides gives leak-proof joint. One straight side secures seal ring in one hub. Scientifically designed threads allow for contraction and expansion; equalize pressure at all points; line up off-center hubs.

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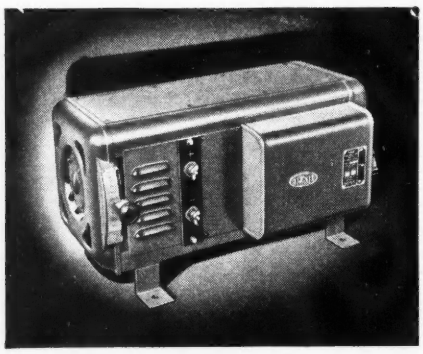
NOTES FOR THE Equipment Buyer and User



P&H - Hansen Model WA-200 Square-Frame Welder for multi-arc Welding service.

welding range from 40 to 225 amperes.

Retaining all the inherently fine characteristics made possible by the Hansen patents which cover automatic volt ampere regulation, self excitation and internal stabilization of the welding current, the WA-200 is built along extremely simple lines, having but two major parts—the one-piece frame and the rotating member itself. All attachments such as external exciters, reactors, resistors, rheostats or separate stabilizers are absent.

Spring - mounted louvers can be snapped on and off to make periodic inspection of brushes and commutator or for minor adjustments. Top and plates are also easily removed. With the new type of patented frame promoting extremely rigid construction and designed to protect bearings against misalignment and wear, vibration is noticeably absent. The rotating member is statically and dynamically balanced.

H. F. CLARK
Halliburton Superintendent at San Antonio.

Baroid Sales Department Takes Over Two Mud Companies

Baroid Sales Department announces acquisition of the drilling-mud business of the Geo. S. Mepham Corporation and C. K. Williams & Company of California.

"This will enable us," an announcement says, "to offer to the trade, in addition to the products previously handled by this company, the products formerly handled by the above mentioned companies. These products include Colox, Jelox and 'Chemical Z,' and they may be obtained in the various oil fields from the same distributors by whom they have previously been handled."

Tubbs Cordage Appoints Atherton Sales Manager

Tubbs Cordage Company, San Francisco, recently announced appointment of Wallace I. Atherton as sales manager, effective July 1.

Hercules Motors Corporation Extends Oil Field Operations

Following out an expansion program announced earlier in the year, Hercules Motors Corporation, Canton, Ohio, has recently completed arrangements for permanent representation in the Illinois oil fields. In addition, direct factory representation has been established in the Dallas area, supplementing the activities of the Hercules branch stores previously opened at Houston and Kilgore, Texas. At these points, complete stocks of Hercules gasoline and Diesel engines, power units and replacement parts are carried. Service to owners of Hercules-powered equipment is handled by a factory-trained personnel.

All Mid-Continent sales and service activities are under the direction of A. B. Wehling, with headquarters at the Houston branch. Fred Goldsmith, previously located at Houston, has established Dallas headquarters at 4130 Prescott Avenue. Russell J. Scott, also formerly connected with the Houston branch, has established headquarters in the Illinois area at 418 North Ninth Street, Mt. Vernon, Illinois.

Halliburton Makes Several Personnel Transfers

With the opening of a new office at San Antonio, Texas, Halliburton Oil Well Cementing Company has made several changes in its Houston and Southwest Texas personnel.

H. F. Clark, formerly assistant superintendent of the Gulf Coast Division, has been transferred to San Antonio as superintendent of the Southwest Texas Division.

L. B. Meaders has been moved from Houston to Corpus Christi, and has been made assistant superintendent of the Southwest Texas Division.

Hubert Northcutt, formerly at Corpus Christi, has been transferred to Houston as assistant superintendent of the Houston District.

NOTES FOR THE Equipment Buyer and User

G. E. Clifford General Sales Manager for Spang, Chalfant

Spang, Chalfant, Inc., has announced election of George E. Clifford, as vice president in charge of sales.

Clifford is a native Pittsburgher, and received his college training at the University of Pittsburgh. He has been with the pipe division of Republic Steel Corporation since 1930—first in capacity of assistant manager of sales, and later as district sales manager of the Los Angeles office. Previous to that time he was associated for five years with the sales department of A. M. Byers Company and with Atlas Powder Company from 1919 to 1925.

Clifford's headquarters will be in the general offices of the company, located in the Grant Building, Pittsburgh.

GEORGE E. CLIFFORD
Vice President in Charge of Sales, Spang, Chalfant, Inc.

Lukens Appoints Curtiss General Superintendent

Lester M. Curtiss, who has been assistant general superintendent of Lukens Steel Company, Coatesville, Pa., has been appointed general superintendent in charge of all operations.

Curtiss succeeds G. Donald Spackman, who has been granted a leave of absence at his own request in the interest of his health. Spackman will continue to serve the company in an advisory capacity, and will resume active duty with Lukens when his health permits.

Curtiss was graduated from Lafayette College, Easton, Pa., in 1916 with the degree of Bachelor of Science in Chemistry. In the same year he joined Merck & Company at Rahway, New Jersey, serving in the chemical manufacturing department. In 1916, he joined Harrisons, Inc., Philadelphia, in the acid manufacturing department until August, 1917. During the war he served as lieutenant in the field artillery, and in 1919 joined Lukens Steel Company as assistant engineer of tests, holding that position until 1923 when he was made engineer of tests. In 1925, he was promoted to assistant superintendent of Plate Mills, and served in that capacity until 1928. He was then appointed superintendent of the Lukens 140" mill and the Lukens 206" mill, the latter being the world's largest plate mill. In 1932 he was promoted to superintendent of plate mills, in charge of all mills of the company. In October, 1935, he was again promoted, to superintendent of production, in charge of all production facilities of the company, which position he retained until his elevation to assistant general superintendent in 1936.

Tank Accessories

Enardo Foundry & Manufacturing Company, 2729 Sand Springs Road, Tulsa, Oklahoma, has released a bulletin in description of a complete line of vapor and pressure control valves for storage and field tanks. The manner in which component items in the line may be assembled to provide a vapor control system that will retain gravity in the highest possible bracket and thereby minimize volume losses is illustrated in the circular.

Flexible Couplings

Morse Chain Company, Ithaca, New York, has a new catalog, Bulletin No. 57, containing complete engineering data, installation and operating information, and recommended applications for the entire Morse Flexible Coupling line—Silent Chain couplings, Roller Chain couplings, Morflex couplings and universal drive shafts, Morflex Radial couplings and universal drive shafts.

Uren's Engineering Book In Second Edition

"Petroleum Production Engineering —Oil Field Exploitation," by Lester C. Uren, a revision of the second half of the author's "Textbook of Petroleum Production Engineering," is a well-balanced 12-chapter treatment of production technology which embraces thorough descriptions and analyses of methods and devices in vogue.

The book, in spanning the production phase of the petroleum industry, begins with an exposition of fact and theory upon the associations and behavior of fluids underground, and elaborates upon the effect of such factors upon rate and quantity of recovery. Pneumatic pumping of wells is explained in detail as to devices and methods, and the applications and limitations of the various systems of pneumatic artificial recovery are outlined.

Mechanical means of recovery are

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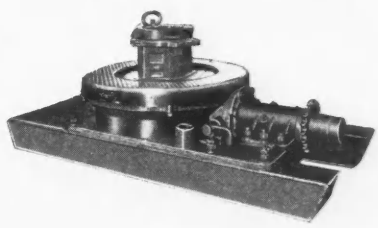

This new rotary is the last word in modern drilling equipment. 18" table opening. Ball-bearing table. Roller bearing pinion shaft. Table bearings, gears and pinion bearings separately lubricated. Table gear and pinion gear are machine cut and heat treated.

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viewed from the standpoints of practicality and efficiency. A profusion of illustrations are used, and graphs and tables are employed, to develop an entirely complete discussion of mechanical media for oil lifting.

In a section devoted to well-management economic benefits that are to be obtained from intelligent operation are stressed. The methods of obtaining an insight to well efficiency are explained and remedial measures are advanced for various well ailments. Shooting, acidization, tubing, pumping practice, well-servicing, water exclusion, etc., are viewed from both the technical and economic sides.

Secondary recovery methods, from mining to vacuum application, are all explained and illustrated. Costs are given, as are recommended procedures.

The equipment and methods of preliminary refining; water, gas, and sediment separation, are treated in detail. Particularly exhaustive and enlightening is a section upon the cause, nature, breaking, and prevention of emulsions.

The gathering, transportation, and storage of oil and gas are taken up in conclusion. Here, as elsewhere in the book, lucidity is attained in even the most technical explanations, a feature that will make the book popular with executives as well as engineers.

Published by McGraw-Hill Publishing Company, copies may be had through the Book Department, The Gulf Publishing Company, Box 2811, Houston, Texas. The price is $6.00.

THE COMPOSITE CATALOG, Houston, Texas, U. S. A.
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OIL FIELD EQUIPMENT

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THE COMPOSITE CATALOG
OF OIL FIELD AND PIPE LINE EQUIPMENT

Pictured above are George Gleeson, sales manager, water meter Division, A E. Higgins, vice president in charge of sales, and W. F. Rockwell, president—all of Pittsburgh Equitable Meter Company. They are about to enter Higgins' plane on the first leg of a flying business trip which, with many stop-overs and side jaunts, will take the ship from coast to coast.

Higgins pilots his own plane, a four-place cabin Stinson. Last year in the course of his business travels, he made three complete transcontinental trips as well as numerous one- and two-day flights to the more important business centers. These three executives travel over 100,000 miles a year in company or commercial planes, and have thus visited customers in Europe and South America in the regular course of business.

Automatic Valves

A new 9-page bulletin entitled "Valve Specialties for the Production Division of the Oil and Gas Industry," is offered by Davis Regulator Company, 2536 S. Washtenaw Avenue, Chicago. It describes the Davis line of gas back pressure valves for maintaining back pressure or vacuum on wells, gathering systems and separators; gas-relief valves for vapor-recovery system; and low water fuel cut-out units for gas-fired field boilers. Designated as Bulletin G-1.

Heat-Treated Gearing

Characteristics and advantages of heat-treated hardened gears are outlined in a new 16-page booklet, Technical Data 71,000, issued by the Westinghouse Electric & Manufacturing Company, Department 7-N-20, East Pittsburgh, Pa.

Demand for increased speeds and loads without an increase in size has resulted in heat-treated gears that offer advantages in quality and, frequently, in size and cost as well. Today, the use of untreated steel for gears that are to transmit appreciable loads is seldom justified.

This booklet describes the Westinghouse-Nuttall method of treatment, control and quenching; compares properties of different materials; defines heat treatment and case hardening, and illustrates these discussions by tables, charts and reproductions of photomicrographs.

Squeaks from the Bull Wheel

Showing Enough

"Pardon me, young lady, in the matter of your dress, don't you think you could show a little more discretion?"

"My gosh, some of you fellows aren't ever satisfied."

Inside Stuff

"Well, fellow, where did you steal this silverware?"

"In the local fraternity houses, your honor."

"Officer, call up the hotels and distribute this stuff."

Not So Dumb

A kindly visitor was one day going through an insane asylum. Presently he saw a fellow sitting beside a flower bed, fishing with his line dropped among the plants. Thinking to humor the patient the visitor asked, "How many have you caught so far, my poor fellow."

"You're the ninth today."

Long-winded

"How long can a man stay under water?"

"Oh, about two minutes."

"Then Jerry is establishing a record. He's been under twenty minutes."

Valor and Discretion

"What is the difference between valor and discretion?"

"Well, to travel on an ocean liner without tipping would be valor; to come back on a different ship would be discretion."

Don't Forget to Steer

And what's more, this model will do ninety in first.

How simply divine; then I won't have to shift.

No Truant Officer

"How do you play hooky from correspondence school?"

"Send 'em an empty envelope."

Mixed the Oils

"Yes, we had to let our maid go."

"But why?"

"Well, you know, we live in a trailer and she kept getting the wrong oil in the salad."

Unmatchable

That teacup you broke yesterday can't be matched anywhere.

Oh, I sure am lucky. I thought I was going to have to buy a new one.

Beats That Peru Story

"The boy in the picture is my grandfather at the age of ten years. Fancy being a grandfather at that age."

Fervent Hope

Sonny—And please, God, make Ireland independent.

Mother—Why, dear, what makes you ask such an absurd thing in your prayer?

Sonny—That's how I answered it in final exam.

Reduced to Cinders

"That boy of yours must be some runner. I see by the paper that he burned up the track yesterday setting new records. Did you see him do it?"

"No I didn't see him do it but I saw the track this morning and there was nothing but cinders left."

The Capitalist

A beggar held out two hats to a passerby. "Mister," he said, "will ye gimme a nickel for a cup of coffee?"

"Sure," replied the passerby, "but what's the idea of the two hats?"

"Well," said the beggar, "business was so good that I had to open a branch."

Exchanged

"Did you change the table napkins as I told you?"

"Yes'm. I shuffled 'em and dealt 'em out so's no one gets the same one he had at breakfast."

Not a Candid Shot

"Why do you say that beautiful photograph of your wife was just a snapshot?"

"Well, it must have been. Her mouth was shut."

Well-Fed

Harold: "You say you were once cast away on a desert island, entirely without food. How did you live?"

Charles: "Oh, I happened to have an insurance policy in my pocket and I found enough provisions in it to keep me alive till I was rescued!"

Not Her

"How do you feel this morning?"

"All right."

"Then I guess I have the wrong number."

But Would He?

"If you had one day to live, how would you spend it?"

"Laughing at my creditors."

Glad Of It

"I came to make an appointment with the dentist."

"He's out now."

"Good; when will he be out again?"

Good Work

"Our friend Dodge tells me that he is doing settlement work lately."

"Yes, his creditors finally cornered him."

Time Element

"Wasn't that egg cooked long enough?"

"Yes, but not soon enough."

Determined

"Does his girl have her own way?"

"Does she? Why, she writes her diary a week ahead."

Diplomatic, Too

"Give me a sentence with an object."

"Teacher, you are very beautiful."

"What is the object?"

"A good grade."

Opening the Switch

"Do you have any green lipsticks?"

"Green lipsticks?"

"Yes, a railroad man is going to call on me tonight."

Reverse

"Why does the whistle blow for a fire?"

"It doesn't blow for the fire. It blows for the water, it already has the fire."

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& COOLERS
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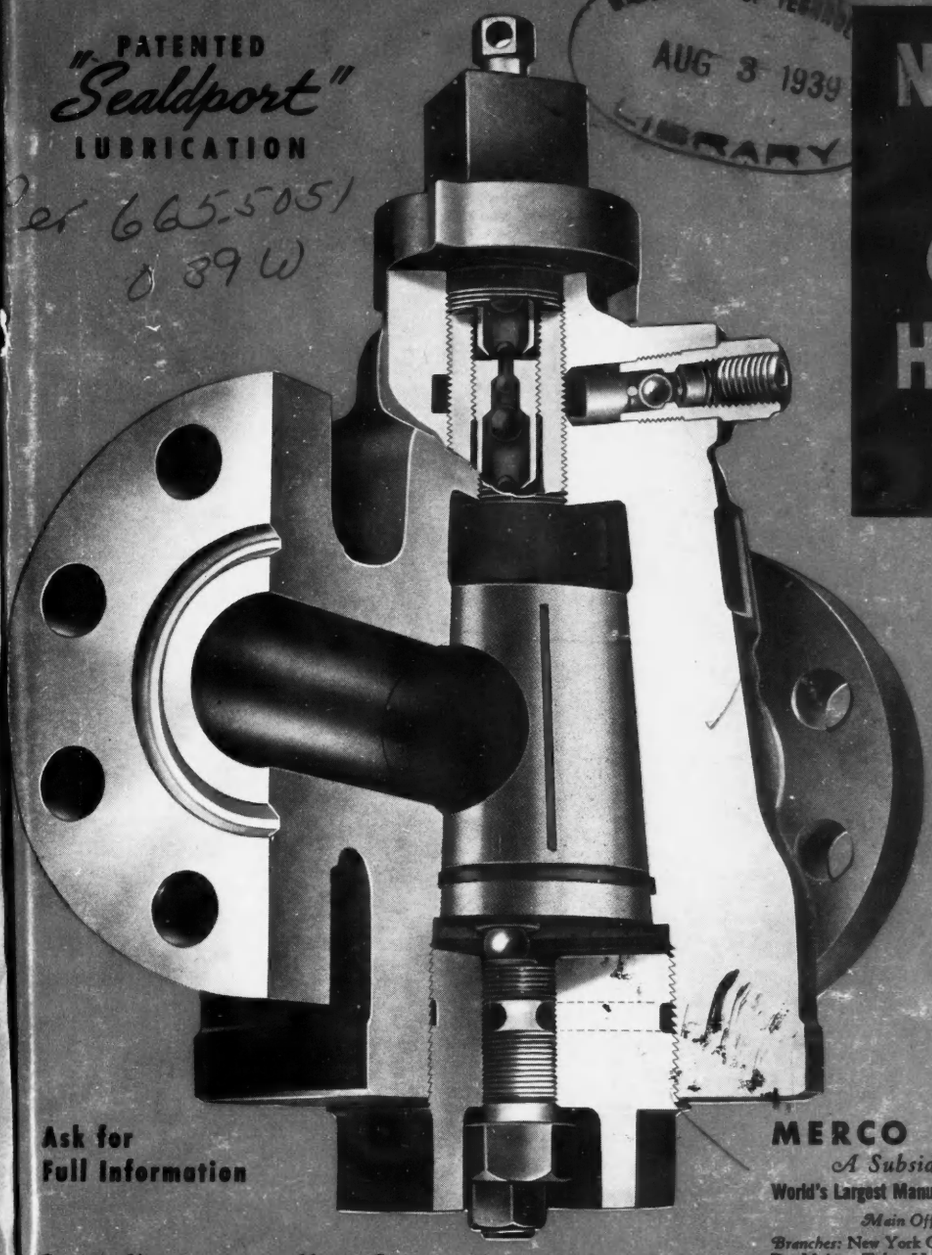

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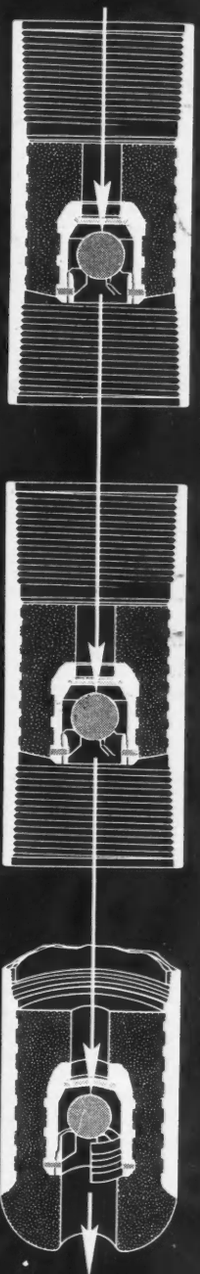
HERE IS CONCLUSIVE EVIDENCE AS TO THE CORRECTNESS OF DESIGN and EFFICIENCY OF BAKER FLOATING EQUIPMENT

Company—Superior Oil Company. Field—Rio Bravo. Well—Moodie No. 1. Depth of Well—11,550'. Size of Hole—17½" from 0' to 1800'; 12¼" from 1800' to 8789'; 11" from 8789' to 11,528'. Casing Program—13⅜" from 0' to 1800'; 7⅝" Extreme Line from 0' to 11,528'. Guiding, Floating, and Cementing Equipment Used—One 13⅜" Baker Cement Guide Shoe at 1800'; One 7⅝" Baker Cement Float Collar at 11,444'; One 7⅝" Baker Cement Float Collar at 11,485'; One 7⅝" Baker Cement Float Shoe at 11,528'. Cementing Data—Bottom Hole Temperature, 250°; Initial Pressure, 500#; Final Pressure, 2200#; Number of Sacks, 2500; Number of Mixing Trucks, 2—(1) 350# Steam Ends, (1) 500# Steam Ends; Number and Size of Rig Pumps, 2—15½"x9¼"x22", 500# Steam Pressure, 5 Boilers; Mixing Time, 40 minutes; Rate of Flow through Two Float Collars and One Float Shoe during Mix, 585 Gallons per Minute; Displacement Time through Two Float Collars and One Float Shoe, 14 Minutes; Rate of Flow through Collars and Shoe during Displacement, 1380 Gallons per Minute.

1380 GALLONS OF CEMENT PER MINUTE WERE DISPLACED THROUGH...



A 7⅝" BAKER CEMENT FLOAT COLLAR POSITIONED AT 11,444'...

A 7⅝" BAKER CEMENT FLOAT COLLAR AT 11,485' AND...

A 7⅝" BAKER CEMENT FLOAT SHOE AT 11,528'

The performance of Baker Floating Equipment on the above job, while outstanding to be sure, was not unusual. In fact, records will show that on the majority of the world's deepest wells, where adequate Safety and Efficiency factors are a "must" Baker Cement Guiding, Floating, Cementing Equipment have been specified (and, of course, on shallow wells these factors of Safety and Efficiency are simply multiplied).

"Safety" and "Efficiency" factors because of their very nature, are often looked upon as being something more or less intangible, but when these terms are used in connection with Baker Equipment, they have definite meaning. For example, in the case of a Baker Cement Float Shoe or a Baker Cement Float Collar, "Safety" means that the unit will safely guide the casing past any side-wall irregularities; that it is amply strong to land and cement the longest and heaviest string of casing; that the Ball-Type Back-Pressure Valve is firmly embedded in the plug of Baker Formula Concrete, which in turn is securely anchored in the steel casing shoe or collar. Safety also means that the internal construction of Baker Floating Units consists only of Baker-Formula Concrete and a small amount of Bakelite, which is quickly and easily drilled up and circulated out of the hole, leaving the hole in proper condition for further coring or drilling operations immediately below the shoe.

"Efficiency" means that the Valve Assembly in Baker Floating Units is correctly designed and that circulation areas through the valve chamber are adequate to handle any fluid capacities of pumps now available; that the Ball-Type Valve affords positive and instantaneous double sealing (against a tough, narrow rubber ring, backed by Bakelite and Concrete) at the slightest reversal of pressure. Here is truly ***Valve Efficiency*** and ***Cementing Efficiency*** at its best . . . plus ***Complete Drillability.***

More details concerning the Safety and Efficiency of Baker Floating Equipment will be found on Pages 221 to 239 of the 1939 Composite Catalog—it will pay you to read them.

BAKER OIL TOOLS, INC.
HUNTINGTON PARK, CALIFORNIA · HOUSTON, TEXAS

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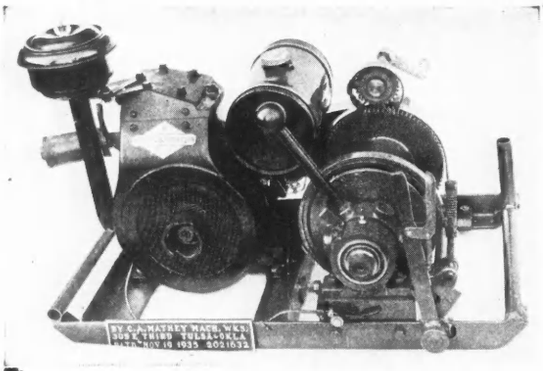

Portable Measuring Units

•

Capacities from 5,000′ to 15,000′

A low cost, sturdy, compact measuring unit, with self-contained gasoline engine, that weighs only 275 pounds with 5,000 feet of line on the drum; two men can easily carry it. Unit will fit in back of small coupe. No changes or special mountings required. Length, 32 inches; width, 19 inches; height, 17 inches.

Capacity, 6,000 feet of .066 line. Ball-bearing equipped throughout. Special type clutch prevents sudden jolt on line and drum when power is applied. Besides regular combination clutch and brake the unit has an extra emergency brake.

Mathey measure meter and accessories available.

Mathey Measuring Units are available for any depth work, with reel capacities from 5,000 feet to 15,000 feet of .072 line.

Write for Details

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LOOKING AHEAD

WITH THE EDITOR

Water Flooding Proves Effective, and Not So Complicated.

MANY dissertations on water flooding have been so highly technical as to scare off the operator equipped with only practical knowledge of production problems.

It is safe to hazard that many a small lease owner might give the subject more consideration, with the idea of possibly applying the practice to his own property, if it were not that he thought the procedure too involved.

If there ever was a successful water-flooding project, it was the one first attempted in Texas. It was one on which most of the scientific data considered so essential a background on which to base present flooding operations was conspicuous by its absence.

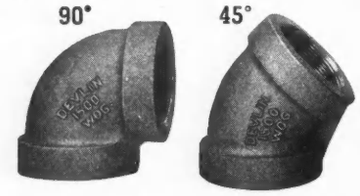
The situation was simple. The men had a field with a few sands. Pumping production, even after gas injection, had dropped to practically nothing. Wells had been cased with an appalling lack of consideration for future conditions or needs. Yet the men who acquired that North Texas lease started injecting water into the sands in accordance with their own ideas of how it should be done. There was no geometric perfection to the pattern.

Maybe you will buck at the social ostracism they accorded the microscope, slide stick, and porosity and saturation determining methods. But the fact remains that the property is producing five times as much oil today as when the project was launched three years ago. And that is what counts.

The story of how this was accomplished is simply told in a thoroughly written article which will appear in an early issue.

ELBOWS and TEES

90° 45°



For 300-pound Working Steam Pressure and for cold, Non-shock Working Oil, Water or Gas Pressures as follows: 1" and smaller . . . 2000 lbs. — 1¼" to 2" . . . 1500 lbs.—2½" to 4" . . . 1000 lbs.—6" . . . 800 lbs. Full range of sizes available in Black or Galvanized finish.

DEVLIN DEPENDABLE HEAVY OIL MALLEABLES

Send for CATALOG 15A

FRETZ SEAMLESS NIPPLES

Made from new, high quality tested seamless tubing . . . threaded accurately to gauge and carefully reamed. Supplied Standard, Extra Heavy, Double Extra Heavy, Black or Galvanized . . . all sizes. Shipped with the distinctive Devlin thread protectors, ready to screw right into the line.

★ Quick Service!

Complete stock (including Standard, Malleable and Cast Iron Fittings and Nipples) always carried by J. E. Bobo, 2120 Rockwell St., Houston, Texas, and at the factory.

THOMAS DEVLIN MANUFACTURING CO.

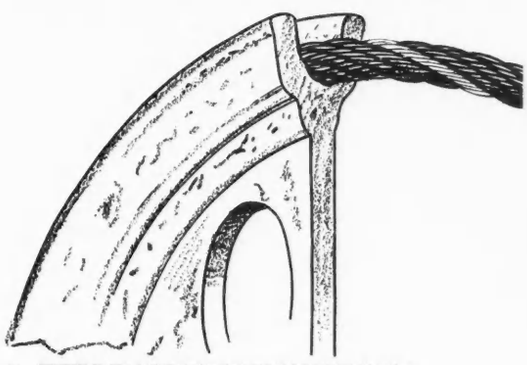
■ BURLINGTON, NEW JERSEY ■

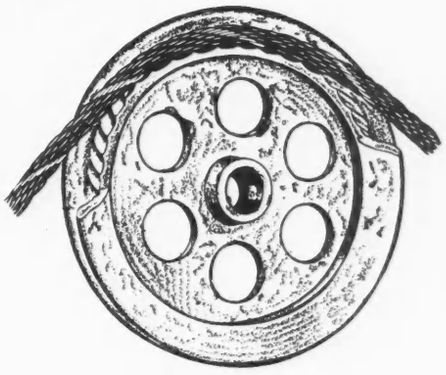
The OIL WEEKLY, Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

HOW SHEAVE MATERIALS AFFECT WIRE ROPE SERVICE

No. 2 in a series of informative articles for wire rope users, prepared by the MACWHYTE *wire rope company*

WATCH YOUR SHEAVES! *And Get Longer Wire Rope Service*

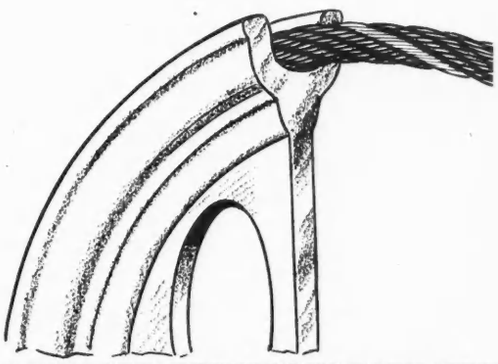


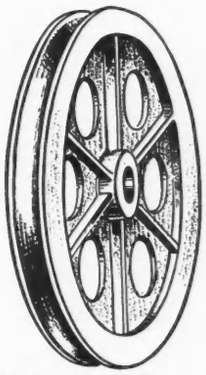


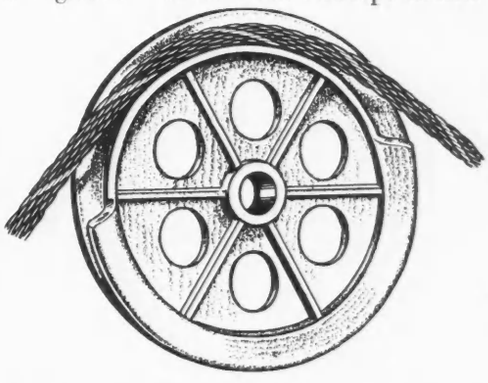
1. THIS DAMAGES YOUR ROPE

(a) Deep scoring of soft sheaves, pinch the rope and cause it to scrub on sheave flange.

(b) SOFT SHEAVE often corrugates. A new rope does not "track" in the corrugations — Result — less wire rope service.







2. THIS LENGTHENS YOUR ROPE SERVICE

(c) A hard sheave does not easily score deeply and damage the rope.

(d) The smooth wearing surface of a hard sheave gives the rope a smooth bearing surface that lengthens the life of both sheave and wire rope.

NOTE: *Tear out . . . put in your wire rope maintenance file*

3. IT IS FALSE ECONOMY to Operate Wire Rope Over Badly Scored and Corrugated Sheaves. WATCH YOUR SHEAVES . . . Keep Them Smooth . . . And Get Longer Wire Rope Service! The benefit of our experience on any problem pertaining to wire rope and its use is yours for the asking. It is part of our friendly service.

Contradictory as it may seem, a *soft* iron sheave that wears rapidly will cause more wear on a wire rope than sheaves made with *harder* materials.

Why Soft Sheaves Cause More Wear on Wire Rope.

A sheave of softer material than the wire rope is likely to take an impression of the wire rope and become deeply scored and corrugated, presenting a ragged surface which damages the rope and causes excessive wear.

A NEW WIRE ROPE USED ON A CORRUGATED SHEAVE WILL NOT "TRACK" IN THE CORRUGATIONS MADE BY THE PREVIOUS ROPE. IT WILL WEAR RAPIDLY AND NOT GIVE MAXIMUM SERVICE. THE GROOVE WILL ALSO WEAR DEEP AND THE FLANGE OF THE SHEAVE WILL CAUSE EXCESSIVE WEAR.

Why Hard Sheaves Increase Wire Rope Service.

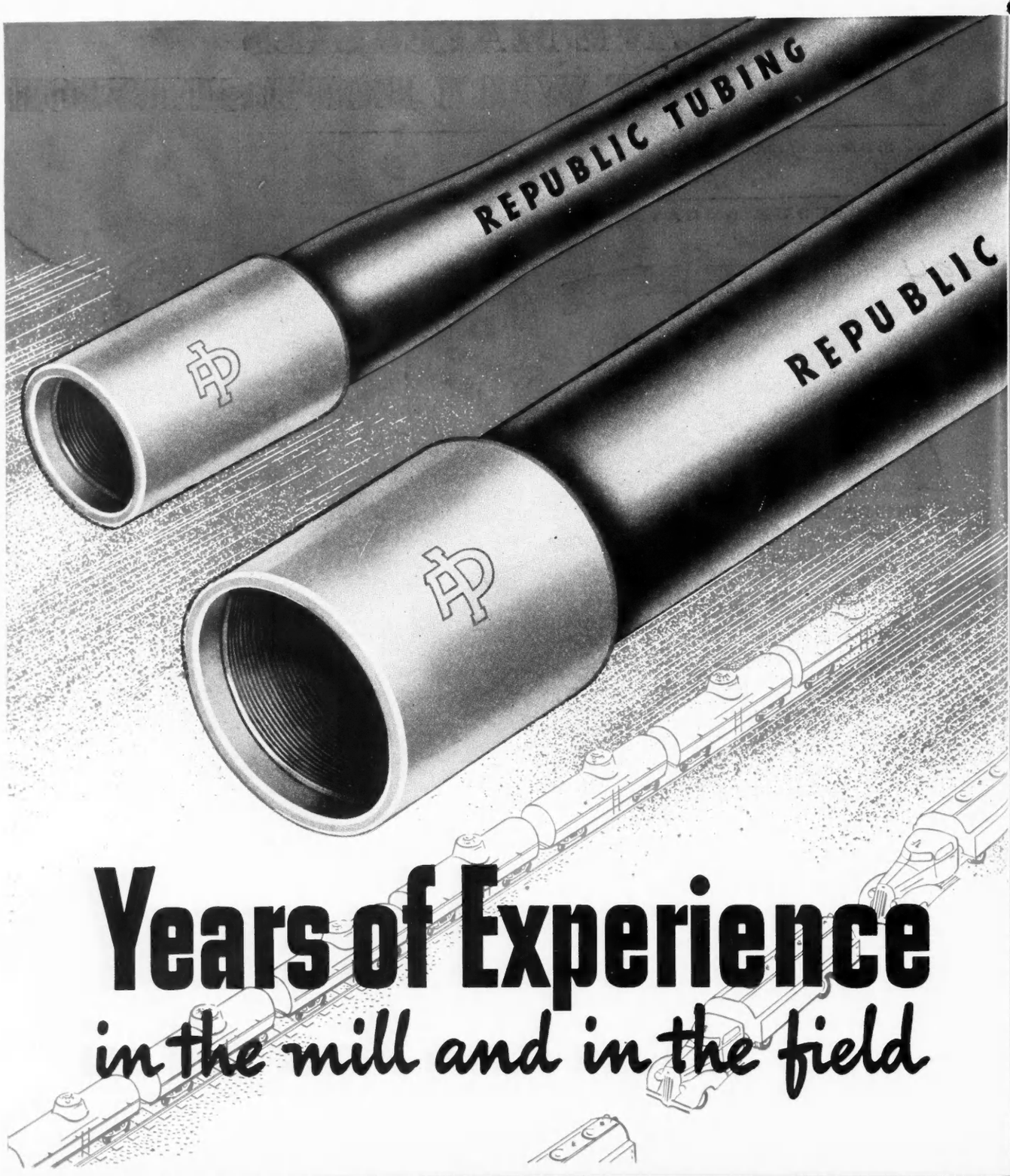
Sheaves made of harder materials...such as carbon steel, manganese, other alloys, or "work-hardening" steels . . . wear smooth, last longer and allow the rope to give the best service.

MACWHYTE COMPANY
KENOSHA, WISCONSIN

Manufacturers of PREformed, Internally Lubricated, Laboratory Tested, and Field Proved Wire Ropes, and Braided Wire Rope Slings for every use. New York . . . Pittsburgh . . . Chicago . . . Ft. Worth . . . Portland . . . Seattle . . . San Francisco.

(Distributors throughout the U. S. A.)

REPRINTS AVAILABLE *of this and other informative articles on wire rope. Simply address: Macwhyte Co., Dept. 422, Kenosha, Wis.*



Years of Experience

in the mill and in the field

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GENERAL OFFICES · CLEVELAND, OHIO

MILL STOCKS AT YOUNGSTOWN,

produced this better pipe

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TONCAN* IRON ENAMELING STOCK (for service stations)

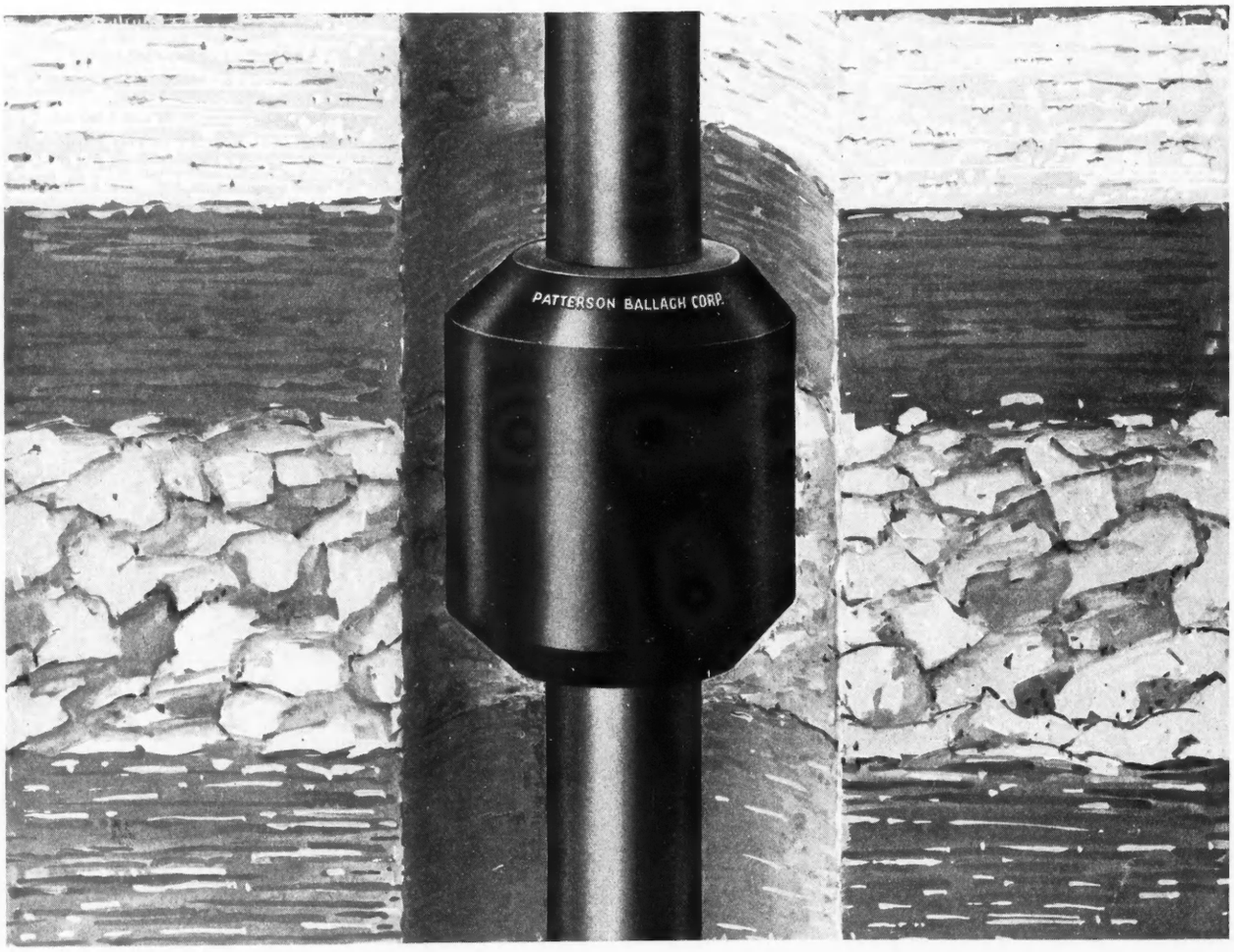
*Reg. U. S. Pat. Off.

Corporation

OHIO AND HOUSTON, TEXAS

UNION DRAWN STEEL DIVISION
BERGER MANUFACTURING DIVISION
NILES STEEL PRODUCTS DIVISION
TRUSCON STEEL COMPANY
STEEL AND TUBES, INC.

Announcing the new
Patterson-Ballagh
Open Hole Stabilizers



The increasing high speeds of drill pipe have introduced certain problems in **open hole drilling** that are causing operators considerable trouble. In order to stand the strains of this new drilling technique, manufacturers are supplying expensive alloy drill pipe with large diameter tool joints. Despite this change the wear on the tool joints has been expensive. Considerable trouble has been had with "twist offs" and bent drill pipe. In reaching the higher speeds it is frequently necessary to pass through a "critical speed." The whip is so great in this speed zone that frequently there is not enough power available to pass through the zone, with the result that drilling cannot be done at the higher speeds.

As a result of several years of experimnt, Patterson-Ballagh now offers a complete line of New Open Hole Stabilizers, made of a new and tougher stock, cured in a special new press designed exclusively for this purpose.

These new Stabilizers will stay in place until worn down to tool joint size. Wear is at a rate that makes a real saving.

Operators claim that the use of these new Stabilizers reduces sticking of drill pipe by keeping the walls of the hole from caving. They say: "Whip is reduced to such an extent that it is shown on the 'Torque Gauge' to have reduced friction as much as 50%. Kinked joints are a thing of the past."

If you are having drill pipe trouble; if the wear is excessive; if the whip is causing trouble—we are sure the new Patterson-Ballagh Open Hole Stabilizer will save you time and money.

Ask for further details. Also request our free Clearance Chart which lists the sizes recommended for your service.

PATTERSON-BALLAGH CORPORATION

General Offices and Plant: 1900 65th St., Los Angeles, Calif.—Mid-Continent Office: 1506 Maury St., Houston, Texas. New York City Office: 39 Cortlandt St.

"...here's MY warehouse!"

Even the nature and extent of the inventory at your FRICK-REID Store is yours to decide if you elect to base your patronage on how complete and well adapted we make our service.

Each of our 71 stores in old and new fields is governed first by the wishes of those operators, large and small, whose confidence and patronage we enjoy.

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If it were possible for each of our manufacturers to maintain separate field stocks as conveniently located as FRICK-REID Stores, the cost to them and to you would be prohibitive.

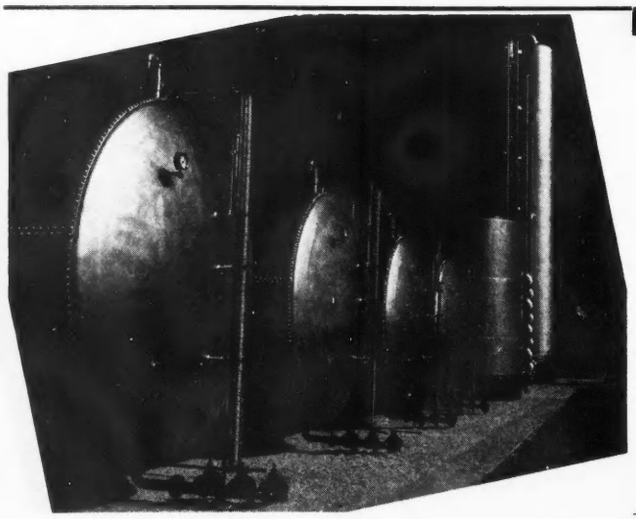
The economy and efficiency of FRICK-REID distribution is unparalled in any industry as migratory, as widely scattered and as limited in total area as the oil industry. It has no comparable service in any industry.

Your FRICK-REID Store is your best friend in fact and in theory.

FRICK-REID *Supply Corporation*

TULSA, OKLAHOMA

71 Stores and 12 Offices in Old and New Fields



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Rust-Ban is not a single product but an extensive line of corrosion-preventing coatings for every branch of the petroleum industry. Each product is designed to fill specific needs. Ask how Rust-Ban can help you solve your corrosion problems. Write for information to your Rust-Ban marketer.

RUST-BAN IS SOLD: In Texas and New Mexico by *Humble Oil & Refining Co.*, Houston, Texas • In New York and New England by *Colonial Beacon Oil Co.* • In Pennsylvania by *Standard Oil Co. of Pennsylvania*, Philadelphia, Pennsylvania • In New Jersey, Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina and South Carolina by *Standard Oil Company of New Jersey*, New York City • In Oklahoma and Kansas and parts of Missouri by *The Carter Oil Company*, Tulsa, Oklahoma • In Arkansas, Louisiana, Tennessee by *Standard Oil Company of Louisiana*, New Orleans, Louisiana • In Kentucky, Georgia, Florida, Alabama, and Mississippi by *Standard Oil Company (Ky.)*, Louisville, Kentucky • In other states by *Penola Inc.*, Pittsburgh, Pennsylvania • In Canada by *Imperial Oil Ltd.*, Toronto, Canada.

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You can place the utmost confidence in Chester Casing and Couplings. They are built to withstand the tough conditions—in every application for which they are recommended. Where service conditions are the most difficult, experienced drillers specify "Chester" for dependable operation.

Threads will not strip under the heavy load of a heavy string of casing, and galling and burning of Chester High Tensile threads is almost unknown.

For all your pipe requirements—you can't go wrong when you say "Chester!"

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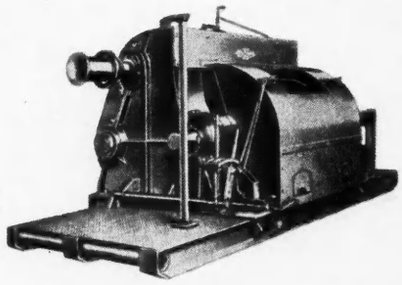
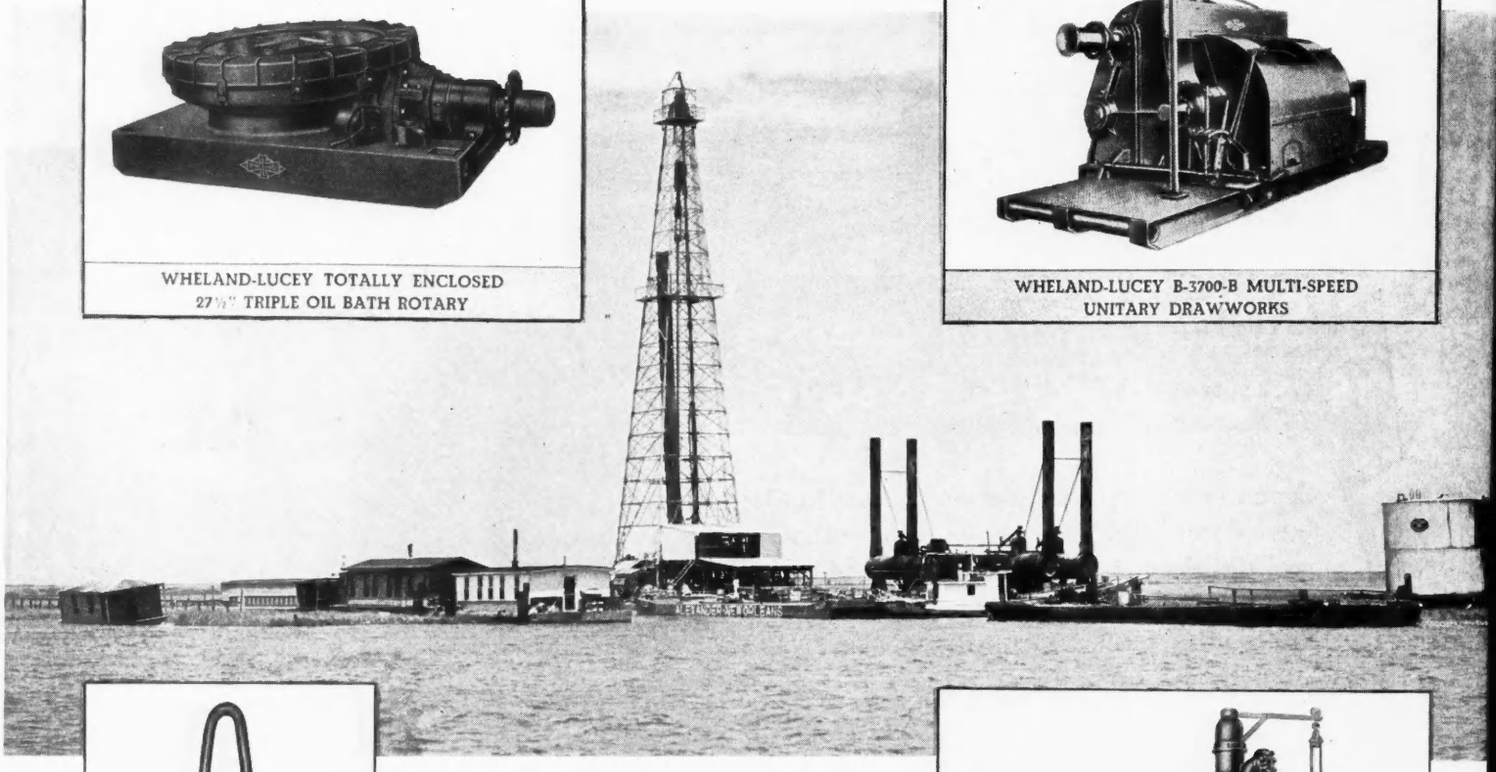
Drilled in Southern Louisiana by the Falcon Seaboard Drilling Company, Tulsa, Oklahoma

WHELAND-LUCEY TOTALLY ENCLOSED
27½" TRIPLE OIL BATH ROTARY



WHELAND-LUCEY B-3700-B MULTI-SPEED
UNITARY DRAWWORKS



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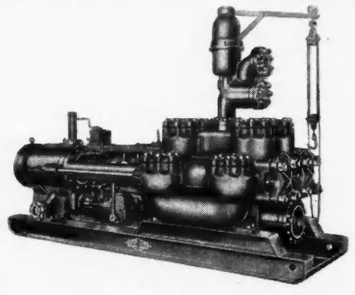
THE DRILLING OF THE 12,000 FOOT TEST WELL

. . . one of the deepest wells ever drilled by contract . . . was completed in record time and in excellent condition.



WHELAND-LUCEY H-20000-AA DUPLEX
STEAM SLUSH PUMP 15¼" x 8" x 20"

The Falcon Seaboard Drilling Company gives a large measure of credit for their excellent work in the drilling of this well to the Wheland-Lucey equipment used by them. In addition to the above illustrated items, other Wheland-Lucey drilling equipment was also used.

PITTSBURGH SPECIAL DOUBLE GRIP 4½" 16.60 lb. Seamless Steel Rotary Drill Pipe was used.

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Yesterday's pioneering by National brings today's finer product . . .

NATIONAL *Seamless*

OIL production has progressed so far beyond the so-called pioneering days, that it's hard to think of today's development work as "pioneering." But that is exactly what it is. The oil industry will continue to progress, and there's still plenty of pioneering work to be done. And NATIONAL Tube will have an important part in the development of better tubular products, just as it always has in the past.

Take the adoption of Seamless Drill Pipe, which today performs feats of deep and difficult drilling that a few years ago would have been impossible. Here's a case of yesterday's pioneering paying today's dividends.

It's the same with Seamless Casing and Seamless Tubing. Pioneered by NATIONAL Tube, these finer, stronger, safer tubular products reduce oil production to a more exact science than ever before . . . they add immeasurably to your profits.

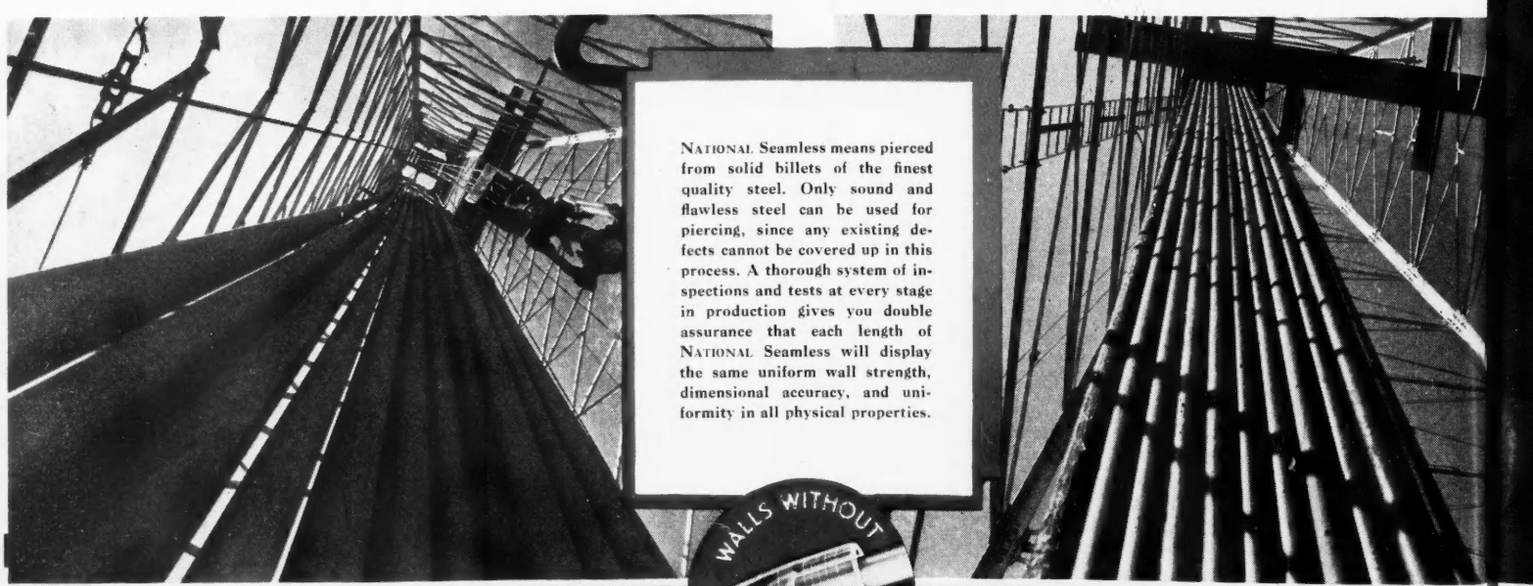
This is the kind of achievement which has made NATIONAL Tube Company the oil industry's headquarters for modern tubular goods. Its pioneering work starts years ahead. And that's why NATIONAL stands for the finest and newest in tubular goods, wherever oil is produced, transported, or refined.

NATIONAL TUBE COMPANY

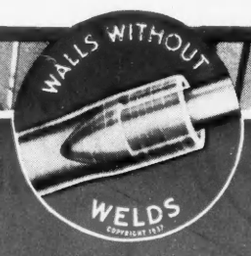
PITTSBURGH, PA.

United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL



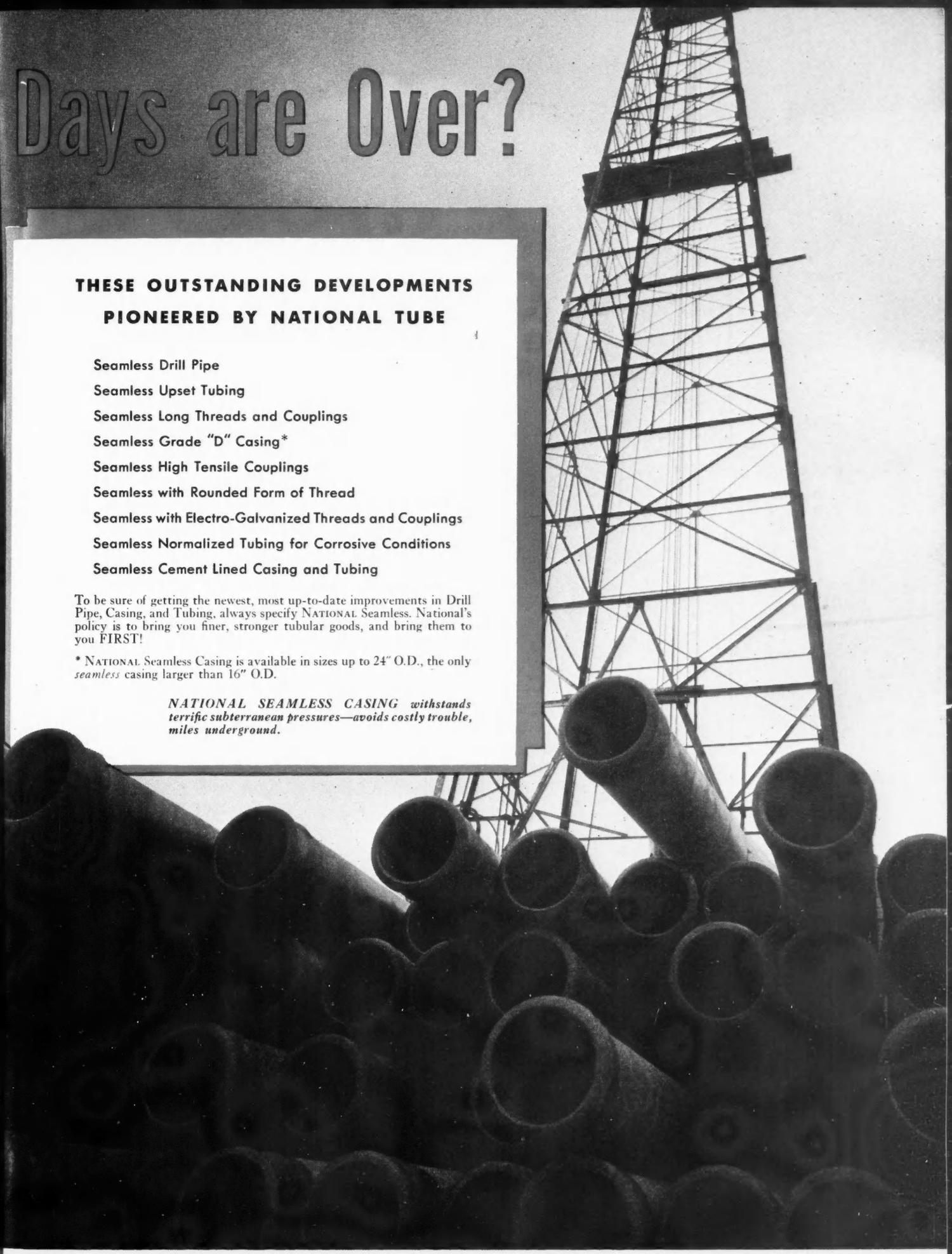
NATIONAL Seamless means pierced from solid billets of the finest quality steel. Only sound and flawless steel can be used for piercing, since any existing defects cannot be covered up in this process. A thorough system of inspections and tests at every stage in production gives you double assurance that each length of NATIONAL Seamless will display the same uniform wall strength, dimensional accuracy, and uniformity in all physical properties.



NATIONAL SEAMLESS DRILL PIPE produces thousands of feet of hole in the world's deepest wells with smooth, dependable performance.

NATIONAL SEAMLESS TUBING resists fatigue and wear, provides long-term protection for your profits when the well goes on the pump.

Days are Over?



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- Seamless Drill Pipe
- Seamless Upset Tubing
- Seamless Long Threads and Couplings
- Seamless Grade "D" Casing*
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- Seamless Normalized Tubing for Corrosive Conditions
- Seamless Cement Lined Casing and Tubing

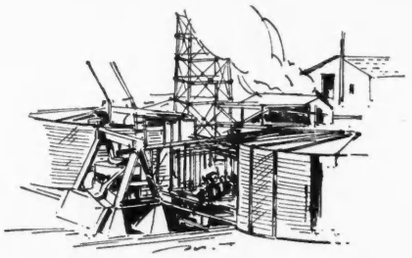
To be sure of getting the newest, most up-to-date improvements in Drill Pipe, Casing, and Tubing, always specify NATIONAL Seamless. National's policy is to bring you finer, stronger tubular goods, and bring them to you FIRST!

* NATIONAL Seamless Casing is available in sizes up to 24" O.D., the only *seamless* casing larger than 16" O.D.

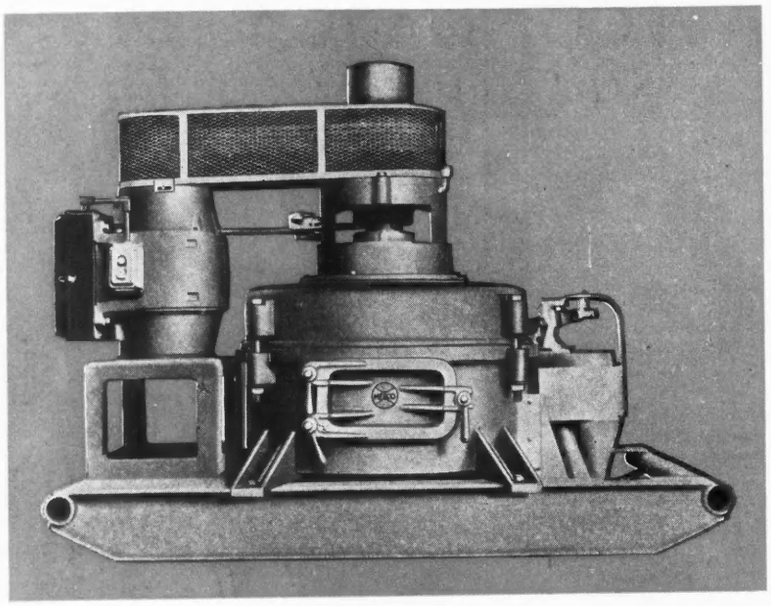
***NATIONAL SEAMLESS CASING** withstands terrific subterranean pressures—avoids costly trouble, miles underground.*

"WALLS WITHOUT WELDS"

CONTROL



THE COST & CONDITION OF YOUR



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Mud costs—weighting costs—and wear costs go higher as drilling goes deeper.

The New MERCO Centrifugal Desander conserves mud by complete extraction of sand—economizes on weighting material by maintaining the proper concentration—reduces abrasive wear on drilling equipment.

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ASK ABOUT MERCO'S *new process*

OF CLEAN DRY RECOVERY OF WEIGHTING MATERIAL FROM MUD ...by Combination Centrifugation and Flotation

Meeting a long-felt want in the drilling industry.

A-24

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- **MORE COMPACT**
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Please send me without any obligation:

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- Price of the New Type A-24 Desander ☐
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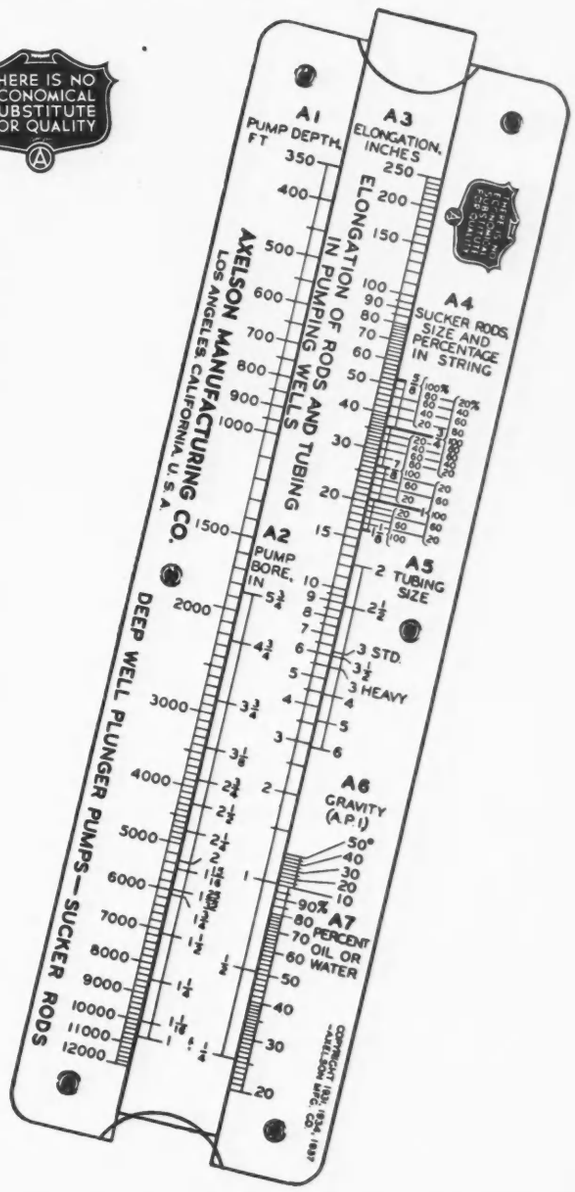
AXELSON

Can Supply **PUMPS** *and* **SUCKER RODS**

ENGINEERED FOR ECONOMICAL DEEP WELL PRODUCTION

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY


A1 PUMP DEPTH, FT
A3 ELONGATION, INCHES
ELONGATION IN PUMPING WELLS TUBING AND RODS OF
A4 SUCKER RODS, SIZE AND PERCENTAGE IN STRING
AXELSON MANUFACTURING CO. LOS ANGELES, CALIFORNIA, U.S.A.
A2 PUMP BORE, IN
A5 TUBING SIZE
3 STD.
3 HEAVY
DEEP WELL PLUNGER PUMPS—SUCKER RODS
A6 GRAVITY (A.P.I.)
A7 PERCENT OIL OR WATER
COPYRIGHT 1934 AXELSON MFG. CO.

Forty-six years ago Axelson developed and manufactured pumps for the "deep wells" of that day—wells that were sometimes as much as 1500 feet deep. Over the years, as wells have been drilled to greater and greater depths, Axelson has invariably produced pumps and sucker rods to meet the new, deeper pumping problems as they arose. Step by step, Axelson has created new pump and sucker rod designs, developed sound operating principles, and acquired the vast manufacturing experience that fits this organization to construct successful pumps for the deep wells of today—and of tomorrow.

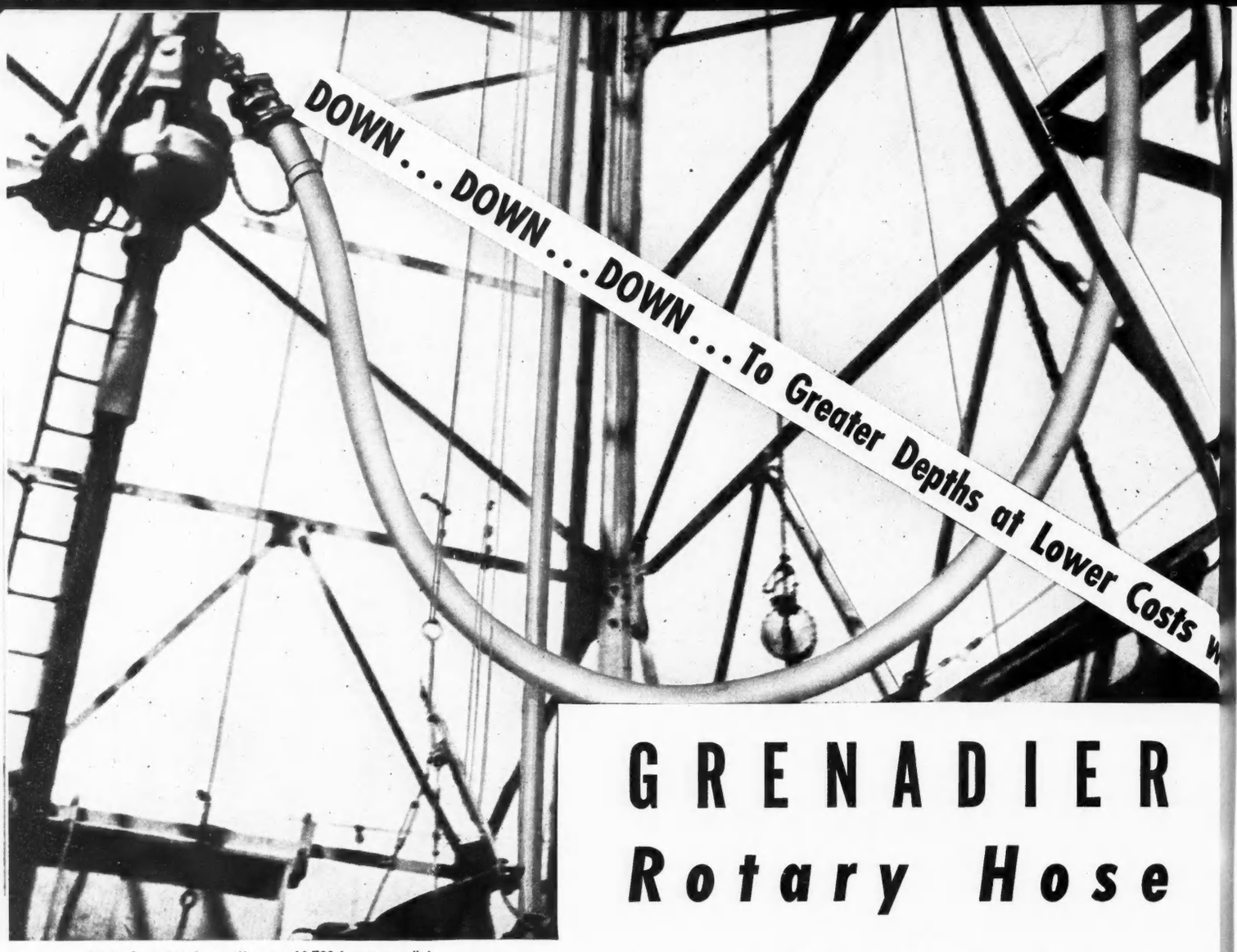
SEND FOR THIS AXELSON SLIDE RULE

The Axelson Slide Rule has been developed to afford a convenient means of determining the production and efficiency resulting from any given set of conditions. With its aid, you can quickly analyze your pumping problems. Note that the scale "A-1, pump depth, feet," reads to a depth of 12,000 feet. This scale was extended when the slide rule was revised *two years ago*. Use it when considering what to do when your deep wells stop flowing—and let Axelson supply the pumps and sucker rods engineered for economical deep-well production.

AXELSON MANUFACTURING CO.

P. O. Box 98, Vernon Station, Los Angeles · St. Louis · 50 Church St., New York · Tulsa · *Mid-Continent and Eastern Distributor:* Frick-Reid Supply Corp. *Rocky Mountain Distributor:* Great Northern Tool & Supply Co.

AXELSON



3-inch Grenadier Rotary Hose on 11,700-foot test well in the Rodessa Field—one of the deepest drilled with rotary hose. Stand-by hose, hanging from derrick for emergency use is a Manhattan 3-inch Super-Dreadnaught Rotary Hose.

GRENADIER
Rotary Hose

11,700 feet below this 50-foot length of 3-inch Grenadier Rotary Hose, the drill bit gnaws deeper and deeper.

11,700 feet and ***still*** drilling! Unheard of not so many years ago. But, today Manhattan Rotary Hose—especially Grenadier Rotary Hose—is strong enough . . . flexible enough to stand the pressure, abrasion and rough treatment required to force the mud through the drill pipe even deeper.

Grenadier Rotary Hose is a Three-Bead Wire Inserted Type Hose. Special duck and metal are held inseparably in place by layers of rubber. That's why it is so flexible! Two reversely wound spiralled layers of wire held firmly by a third radially wound layer prevent separation and breaking down of the hose wall. That's why Grenadier Rotary Hose is so strong . . . so resistant to high pressure, surge, stretch, abrasion and crushing.

For exceptionally hard drilling with mud or slush . . . for exceptionally long life and low costs, get Grenadier Rotary Hose—no well is too deep, no pressure too high. It is available with either clamps or Type D Built-in Couplings, with both plain and enlarged or full-flow opening ends that have no constricting nipple to reduce mud flow or to demand increased pump pressure, nor to wear the inside edge of the nipple so sharp that it cuts the inner rubber tube and hose life.

OTHER SPECIAL PRODUCTS FOR THE OIL INDUSTRY

Flat Belting and V-Belting; Oil Loading Hose; Rubber Covered Pistons; Piston Liner Sleeves; Stuffing Box Rings; Air, Steam, Water, Fire Hose; Brake Lining for Draw Works; Paranite-G.O.P. Tank Car and Truck Hose; Slush Pump and Intake Hose; Molded Rubber Products.

Distributors

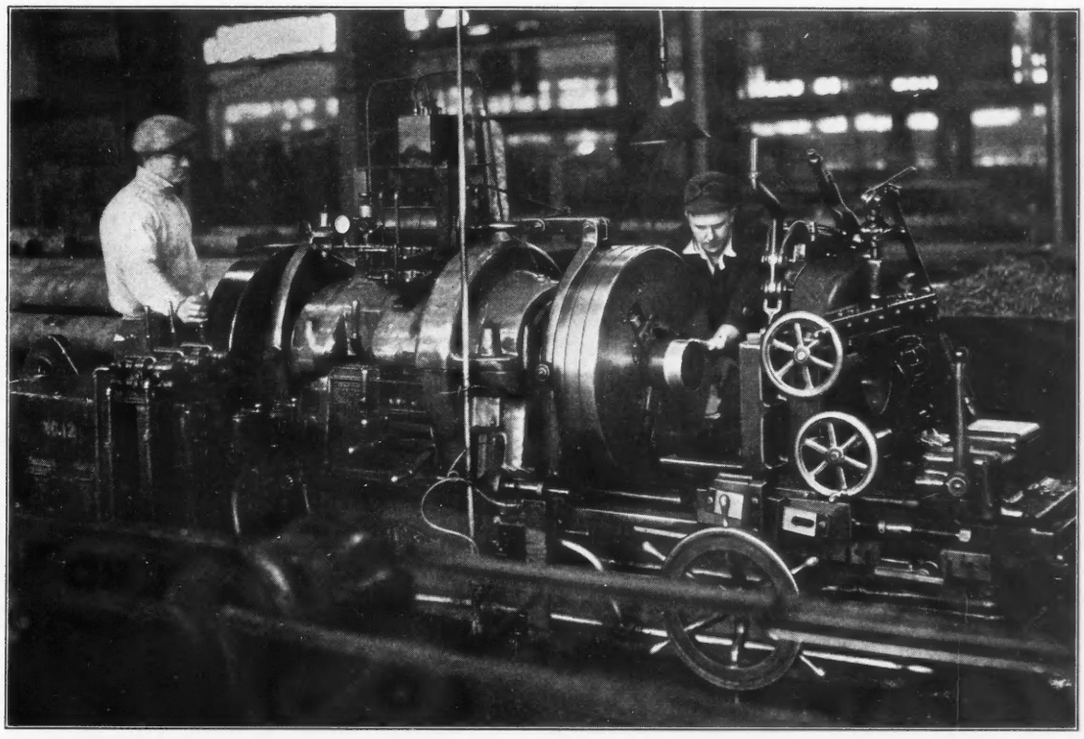
In All Fields Except California
THE NATIONAL SUPPLY COMPANY

In the California Oil Fields
HOWARD SUPPLY COMPANY

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES and FACTORIES, 71 TOWNSEND ST., PASSAIC, N. J.

Progressive Manufacturers and Jobbers of Oil Well Tubular Goods Employ



LANDIS Pipe Threading Machines Equipped with Receding Chaser Die Heads

FOR PROFITS
MACHINE
TOOL SHOW

CLEVELAND
OCT. 4 to 13, 1939

Correctly formed threads with smooth finish and accurate taper are assured by using the Receding Chaser Die Head on the LANDIS Pipe Threading and Cutting Machine.

The free cutting action of the LANDIS Receding Chaser Die Head makes it practical to thread all grades of high carbon seamless, or electrically welded, oil well tubular goods—at high speeds and with economy.

DETAILS? Write us today for more information about the LANDIS Receding Chaser Pipe Threading Machine.

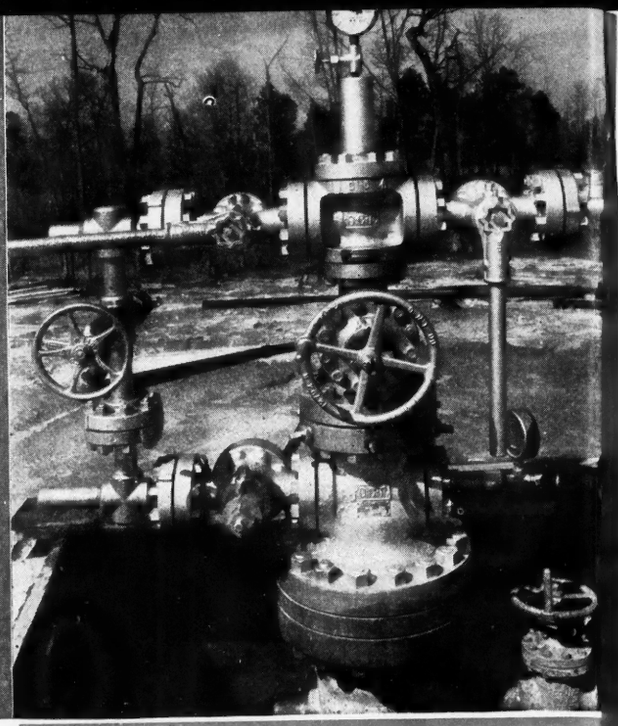
LANDIS MACHINE COMPANY, Inc.

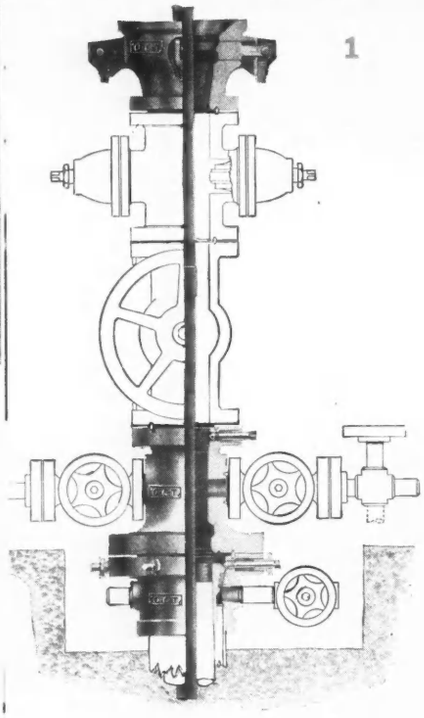
Waynesboro, Penna.

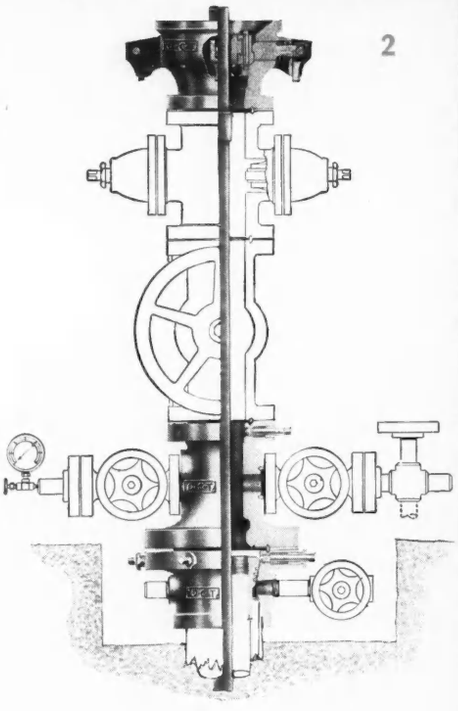
Here's How

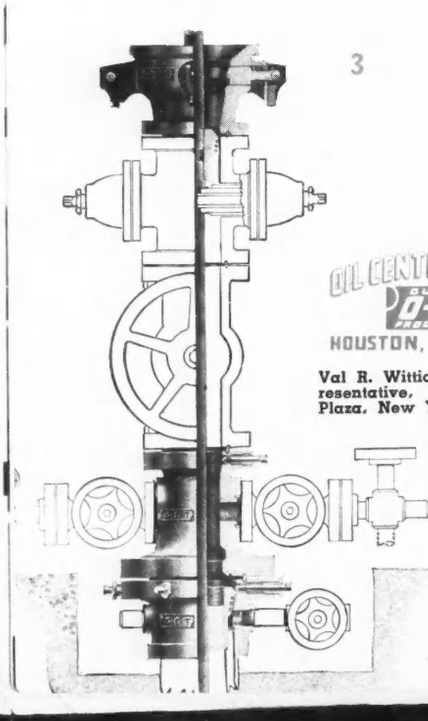
THEY COMPLETE 'EM IN HIGH PRESSURE FIELDS—

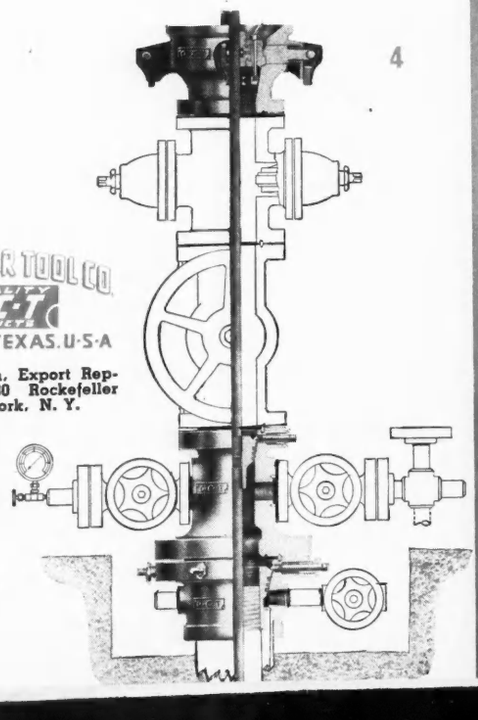
USING: O·C·T TYPE T-16 TUBING HEAD AND O·C·T BLOWOUT PREVENTER





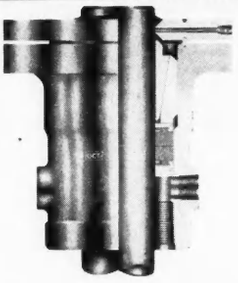






OIL CENTER TOOL CO.
QUALITY O-C-T PRODUCTS
HOUSTON, TEXAS, U·S·A

Val R. Wittich, Export Representative, 30 Rockefeller Plaza, New York, N. Y.



Cross-section view of O-C-T Type C-9-C Slip Suspension Casing Head with Welding Flange as shown in the Christmas tree photograph above.

This simplified method of well completion has been adopted as regular routine by a number of operators in deep, high-pressure Gulf Coast and Mid-Continent fields. (La Blanca, 4100 lbs. pressure; Premont, 3300 lbs. pressure; Fairbanks, 2700 lbs. pressure; Schuler, 2100 lbs. pressure, and others.) Cross-section drawings at left illustrate, step-by-step, this widely used completion method, which also applies to O-C-T types T-20, T-25, and T-26 Tubing Heads. And while O-C-T Type C-8 threaded hanger type Casing Head is illustrated, O-C-T Type C-9-C Casing Head, shown above, is generally used to suspend and seal long, heavy strings. Type C-9-C Head is provided with neoprene packing below slips, which effects pressure tight seal the instant pipe is landed on slips. Welding casing to welding flange effects seal above slips, and A.P.I. ring gasket seals between flanges. An unusual feature of this head is a provision for testing the weld. A ⅜" hole is drilled through welding flange and tapped for a ½" pipe connection to permit application of hydraulic pressure for testing the seal. Testing apparatus is small and compact, weighing less than 20 lbs.

1. With "T-16" Tubing head installed on casing head and conventional master gate, ram type blowout preventer and O-C-T Blowout Preventer flanged above, well is drilled in.

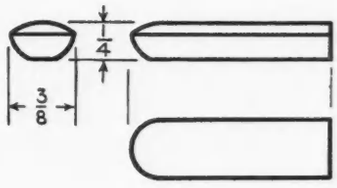
2. After drilling in, stripper type packoff is inserted in O-C-T Preventer to permit running tubing to bottom under pressure. Stripper packoff readily passes pipe collars, yet effectively holds well pressures.

3. With ram type preventer closed around tubing, stripper packoff is removed from O-C-T Preventer to permit passage of tubing hanger, which is lowered enough to clear this preventer and permit regular type packoff to be inserted.

4. Then, with O-C-T Preventer providing blowout protection, ram type preventer is opened to permit tubing hanger to pass to its seat in Tubing Head. Making up lock-down screws forces tubing hanger to seal, thus permitting removal of all blowout preventer equipment and installation of top half of Christmas tree. With complete Christmas tree installed and flow line connections made, well is ready to be washed in.

Write for new 1939 O-C-T Catalog just off the press, which illustrates and describes all O-C-T equipment and well completion methods.

Have you tried the new Haystellite Inserts?



Size 14: 1¼ to 1½ in. long
Size 15: ¾ to 1⅛ in. long
Size 16: ⅜ to ¾ in. long

PRODUCTS OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

THREE new Haystellite inserts have been developed for improved drilling tool performance. These inserts are now added to the nine other sizes which have made drilling history.

New Shape

Note especially the new shape in the illustrations above, in which the inserts are shown actual size. The narrow flat area prevents wobbling and helps the welder position each insert correctly. The rounded sides bond tightly and strongly with the surrounding steel.

When your drilling tools are set with these new Haystellite inserts and faced with Haystellite tube rod, you are assured of uniformity and dependability. All Haystellite products are made under close manufacturing control, with rigid inspection standards . . . That's why Haystellite tungsten carbide products take so much of the guess out of drilling tool performance.

Literature Available

Write today for the 36-page book, "Haynes Stellite Products in the Oil Fields," which further describes these products and tells how to use them for best results. There is no obligation.

The words "Haystellite" and "Haynes Stellite" are registered trade-marks of Haynes Stellite Company.

HAYSTELLITE TRADE MARK

Cast tungsten carbide diamond substitute

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

Chicago · Cleveland · Detroit · Houston · Los Angeles · New York · San Francisco · Tulsa

General Office and Works—Kokomo, Indiana
Foreign Sales Department—New York City

Haynes Stellite hard-facing rods and information on other Haynes Stellite Company products also are available through all apparatus shipping points of The Linde Air Products Company

This unretouched photograph shows an unusual condition of corrugations in a sheave groove — due to the use of first a left lay wire rope, followed by a right lay rope. Note the resemblance to a rasp.

Give Your Wire Rope a Fair Chance

While wire rope is made to absorb a lot of wear and tear, the full service of which it is actually capable cannot be had if it is handicapped by poor working conditions. Take, for instance, sheaves and drums. If they are of too small a diameter for the size and construction of rope used . . . if they are made of unsuitable material . . . if the grooves are of improper design or size . . . if sheaves are out of alignment, or if they do not turn freely—shortened rope life is bound to result.

The above illustration shows a sheave made of material too soft to withstand the pressure put on it by the rope. Corrugations such as these, or any corrugations, produce a filing action that no wire rope can withstand for long.

When a new rope is installed on a badly corrugated sheave or drum, its handicap is even greater, for there is almost invariably a difference in the twist of an old rope and a new one—consequently the strands of the new rope will not fit into the old corrugations—which results in such rapid wear on the rope as to become critical in a very short time. When it is not possible to replace a corrugated sheave with one made of proper material, the corrugations should be removed before a new rope is put on.

The proper material to use for sheaves and drums depends on the rope pressure encountered. For example, with a 6 x 19 rope cast iron is satisfactory if the pressure is not greater than 450 lbs. per square inch. Cast steel sheaves or drums are suitable for pressures between 800 and 900 lbs. per square inch. For higher pressures, manganese or chrome steel sheaves are recommended for both safety and long run economy.

This advertisement is published for the purpose of helping all wire rope users obtain safer and more economical service from their wire rope

A. LESCHEN & SONS ROPE CO.

WIRE ROPE MAKERS — ESTABLISHED 1857

5909 KENNERLY AVENUE — ST. LOUIS, MISSOURI, U. S. A.

NEW YORK . . . 90 West Street
CHICAGO . . 810 W. Washington Blvd.
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"HERCULES" (RED STRAND) WIRE ROPE

SAN FRANCISCO . . 520 Fourth Street
PORTLAND . . 914 N. W. 14th Avenue
SEATTLE . . 3410 First Avenue South

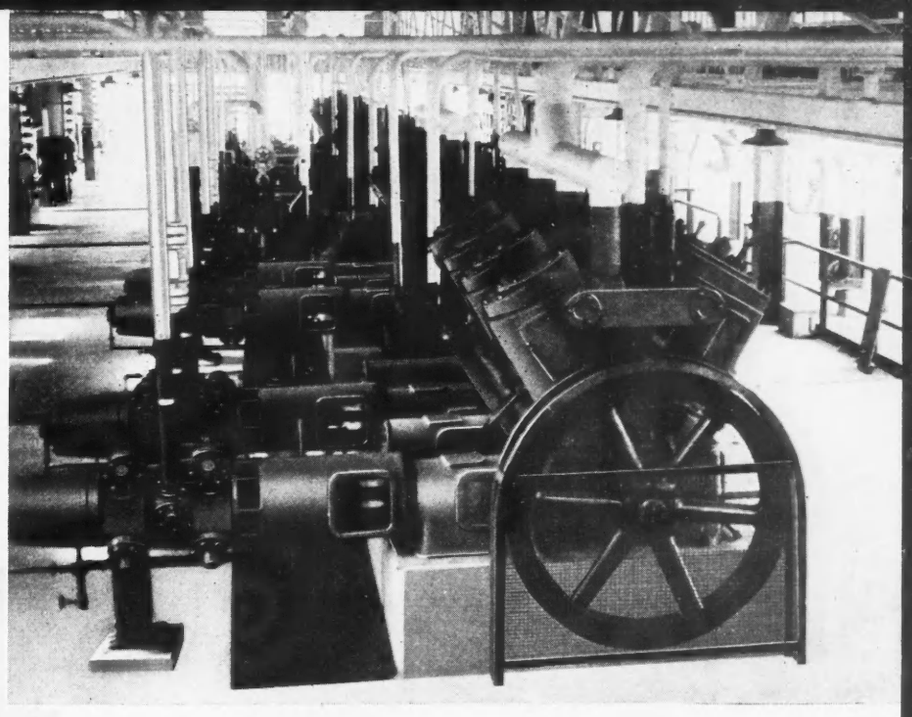
The first GAS-ENGINE COMPRESSORS

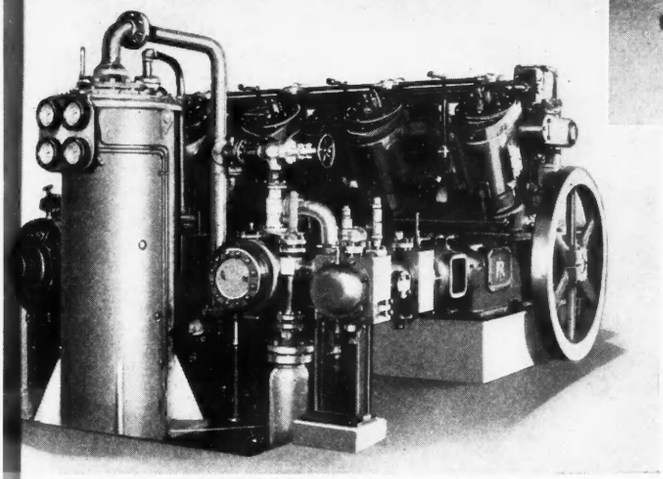
in

HIGH-PRESSURE HYDROGENATION SERVICE

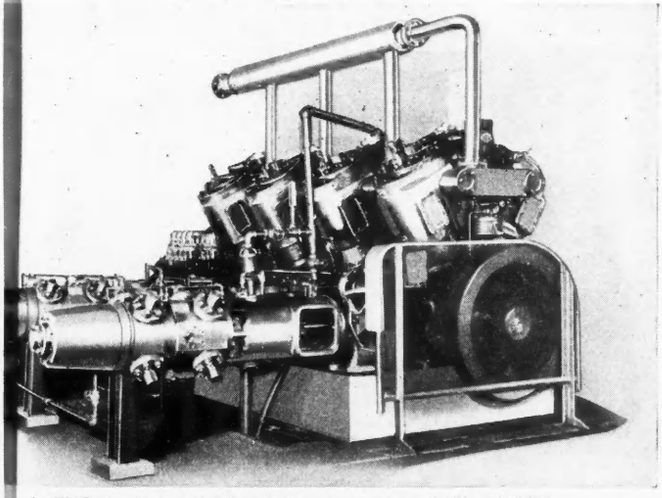
ATMOSPHERIC INTAKE
3500 LB. DISCHARGE

INGERSOLL-RAND TYPE XVG





One of the three 4-stage XVG Compressor units compressing hydrogen to 3500 lb pressure.



An XVG circulator which boosts the pressure from 2800 to 3500 lb.

- The first gas-engine-compressors built for high-pressure hydrogenation service are 5 Ingersoll-Rand Type XVG machines installed in the Lago Oil & Transport Company's hydrogenation plant at Aruba, Dutch West Indies. Three 300-hp, 4-stage units compress hydrogen from atmospheric pressure to 3500 pounds discharge. After a pressure drop during processing, two 300-hp, single-stage circulators boost the pressure from 2800 pounds to 3500 pounds. In this latter service there is also an Ingersoll-Rand steam-driven Type XPV compressor.

Four of the five hydrogenation plants in the United States use I-R compressors exclusively for high-pressure work, and they have also been adopted in two plants abroad. These installations aggregate 13,500 hp in primary 4-stage machines, and 5500 hp in circulators. They include electric-, steam-, and gas-engine-driven units in both classes, in sizes up to 1250 hp.

Not only in hydrogenation service, but in the field of high-pressure work as a whole where 24-hour full-load operation is essential, Ingersoll-Rand compressors exceed all other makes in total horsepower. The extensive experience our engineers have had with high-pressure problems insures intelligent and helpful collaboration with the oil industry in choosing the most economical and effective equipment for any high-pressure service.

Atlanta	Dallas	Knoxville	Salt Lake City
Birmingham	Denver	Los Angeles	San Francisco
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Butte	El Paso	Philadelphia	St. Louis
Chicago	Hartford	Picher	Tulsa
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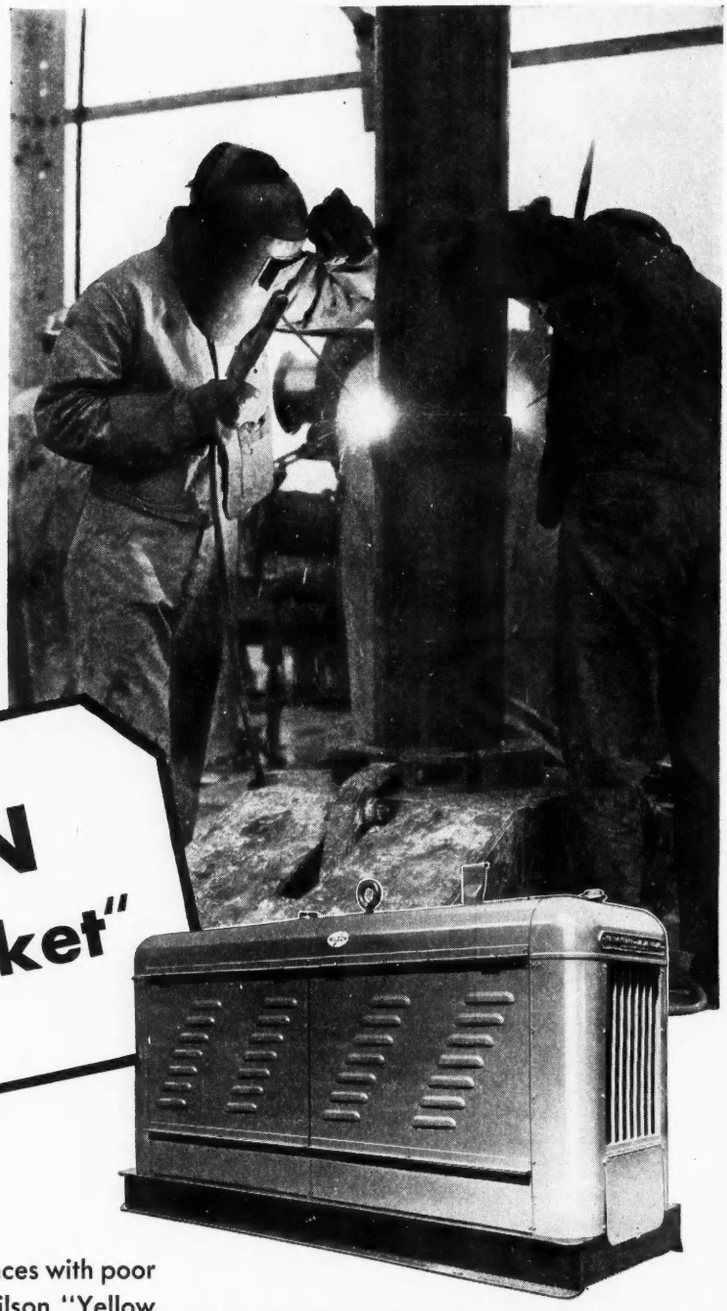
777-1

Ingersoll-Rand
11 BROADWAY, NEW YORK, N. Y.

Get BETTER WELDS at rock bottom cost with the...



WILSON "yellow jacket"

When casing a deep well you can't take chances with poor welds — and you don't have to. Use the Wilson "Yellow Jacket" arc welding machine and be sure your welds are the best obtainable. » » » The "Yellow Jacket" masters the difficult welding conditions encountered in this work. Its outstanding features include: Light weight — rigid strength — low center of gravity — improved automatic idling device — large gasoline tank — close coupling of drive and generator. » » » When used with Wilson high tensile, low splatter "Casing Rod," the "Yellow Jacket" assures strong, leak-proof welds at lowest cost from start to finish of the job. Write for complete details.

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AIRCO DISTRICT OFFICES IN PRINCIPAL CITIES

Represented in Canada by RAILWAY & ENGINEERING SPECIALTIES, LTD., and CANADIAN LIQUID AIR COMPANY, LTD., Toronto, Montreal, Winnipeg

AIRCO *Anything and Everything for* GAS WELDING or CUTTING and ARC WELDING WILSON

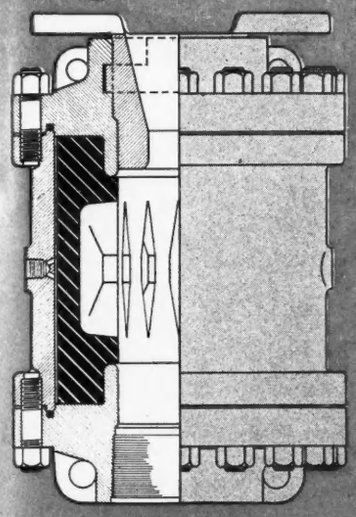
Regan Type K Blowout Preventer

Controls threatened blowouts
—until weight material can be added.

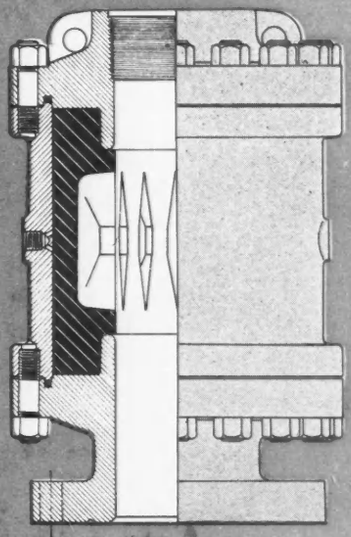
Permits operation under pressure
—running casing, drill pipe, tubing.

Provides emergency equipment
—has been used for safe complete shut-off.

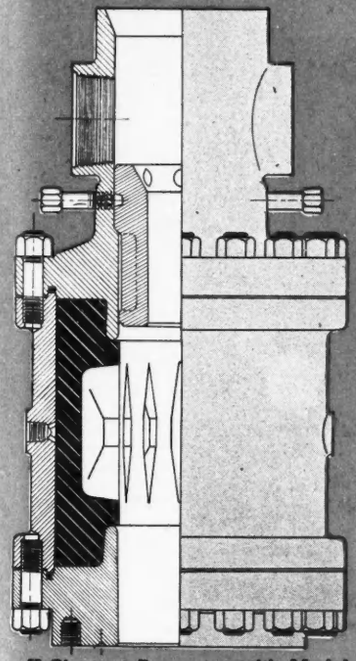
Allows instant closing
—by remote control.



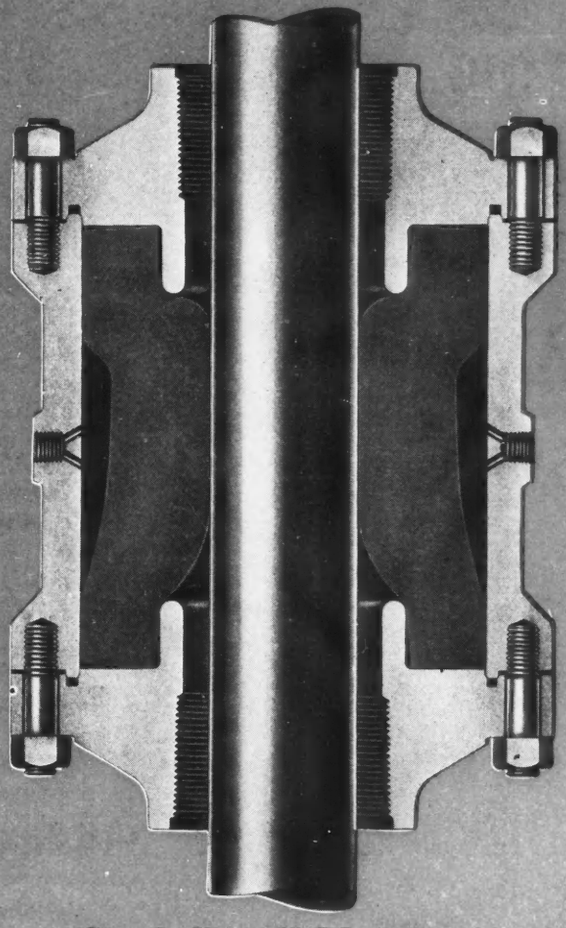
Type K Blowout Preventer with Model 11 Top Flange and Model 3 Bottom Flange. Fitted with reducing bushings for high pressure.



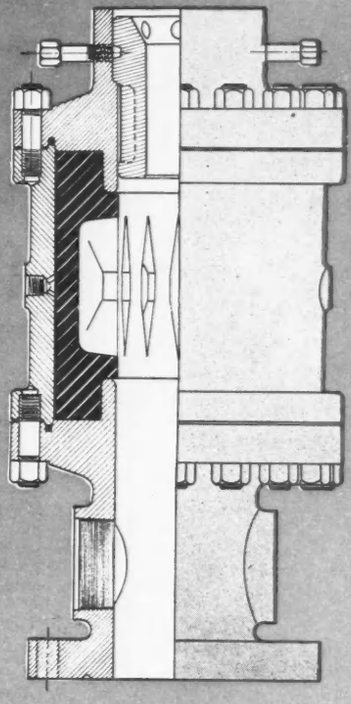
Type K Blowout Preventer with Model 3 Top Flange and Model 5 Bottom Spool. Also adapted to bolt to drilling valve and with provision for riser nipple to connect with mud lines.



Type K Blowout Preventer with Model 7 Top Flange and Model 9 Bottom Flange. Can be studded on to drilling valve. Permits short cellar connections and places the mud return line above the Blowout Preventer.



Single Type K, Model 3
See Composite Catalog



Type K Blowout Preventer with Model 8 Top Flange and Model 6 Bottom Spool. Can be bolted direct to drilling valve.

Regan

Forge & Engineering Co.

San Pedro California

Quality – Wrought on the Forge of Experience

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New York — 17 Battery
G. R. Woods, Rep.

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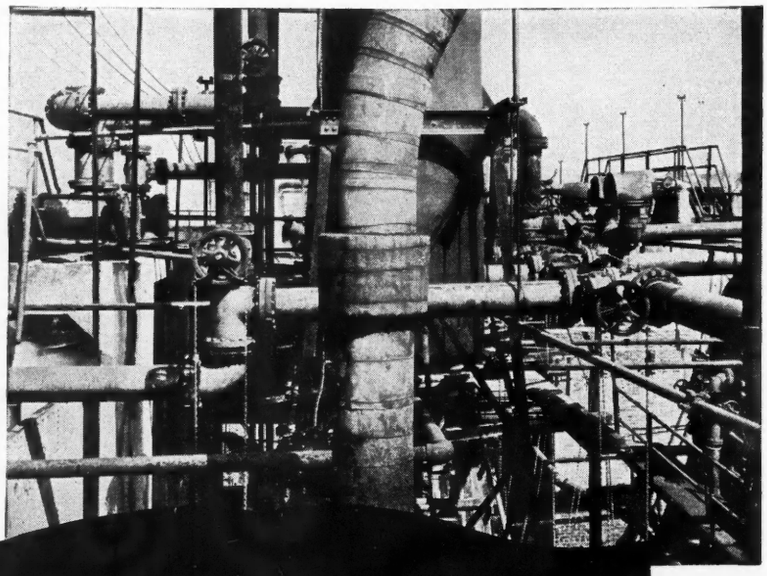

Service and Savings *begin with* SPECIFICATION

The way to get good valve service is to specify good valves. The way to get *the best valve service* is to specify the valves *best suited to your individual needs.* Check your valve requirements against Darling features of design, quality and durability. Then you'll specify Darling—*and Darling will live up to specifications!*

The Darling Valve is the choice of the refinery field for three vital reasons. First—because of its high standard of efficiency! Second—because it wears well! Third—because it assures easy operation. Write for complete details—and specify Darling.

DARLING VALVE & MANUFACTURING COMPANY

WILLIAMSPORT, PA.

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Distributors:

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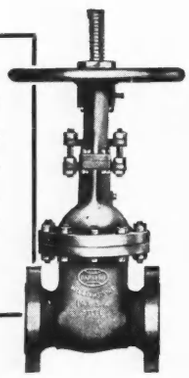
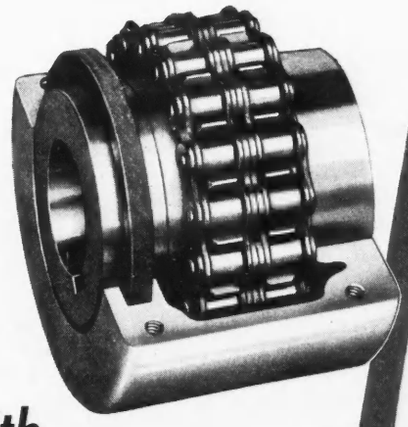
Moorlane Company, Tulsa
Hickey Pipe & Supply Co., Los Angeles
McJunkin Supply Co., Charleston, W. Va.

Darling Cast Steel Gate Valves are available in regular carbon, stainless steel or other alloys.

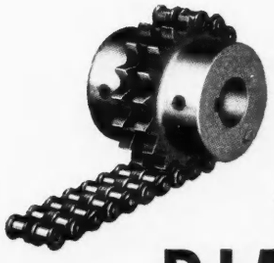


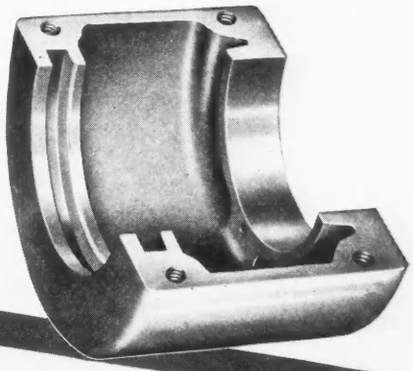
DARLING GATE VALVES

The ORIGINAL
Chain Type Couplings



Removal of one pin disconnects the coupling.





ALUMINUM CASING

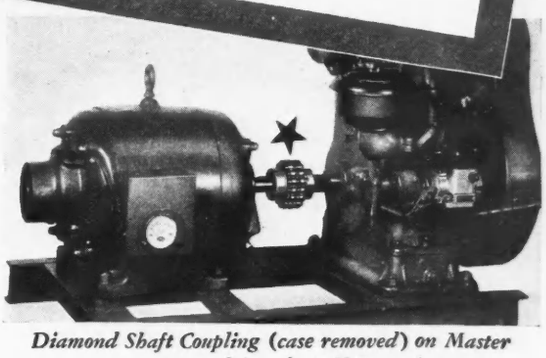
Diamond Revolving Aluminum Casings snugly enclose the coupling. They are secured by four screws, making installation and removal simple and quick. A fitting is provided for filling with lubricant.

with

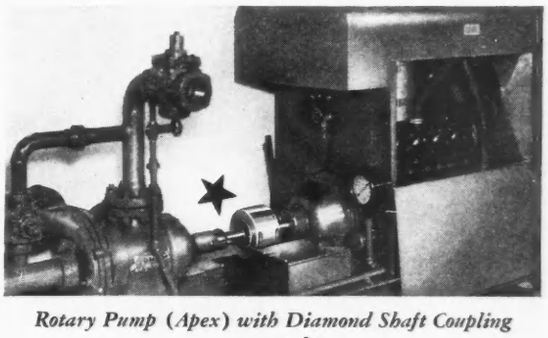
DIAMOND
Double Strand Roller Chain

● Diamond Roller Chain Type Shaft Couplings were the first of their kind—used by the tens of thousands for a quarter of a century . . . Simple and rugged—just two sprockets and a length of double-strand DIAMOND Roller Chain. Clearance between the steel sprockets and the roller chain sideplates permits freedom of movement and adjustment to angular misalignment of shafts and end play . . . Removal of one chain connecting link is all that need be done to separate the driving and driven units. . . . Diamond Shaft Couplings will meet your requirements—they are made for fractional horsepower drives and up to 500 H.P. Let us mail Coupling Bulletin No. 12. DIAMOND CHAIN & MFG. CO., 485 Kentucky Ave., Indianapolis, Indiana. Tulsa, Oklahoma: 2238 Terwilleger Blvd.

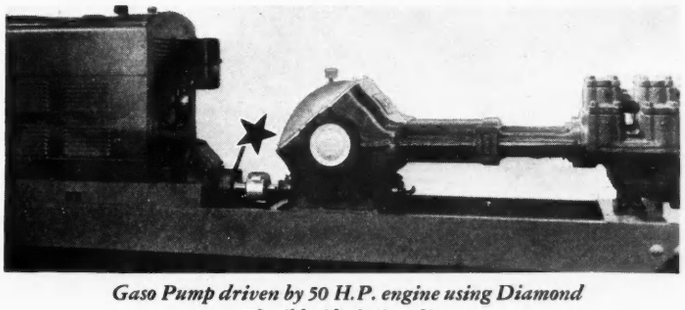
DIAMOND
SHAFT COUPLING



Diamond Shaft Coupling (case removed) on Master generator set driven by 3 H.P. engine.



Rotary Pump (Apex) with Diamond Shaft Coupling encased.



Gaso Pump driven by 50 H.P. engine using Diamond Flexible Shaft Coupling.

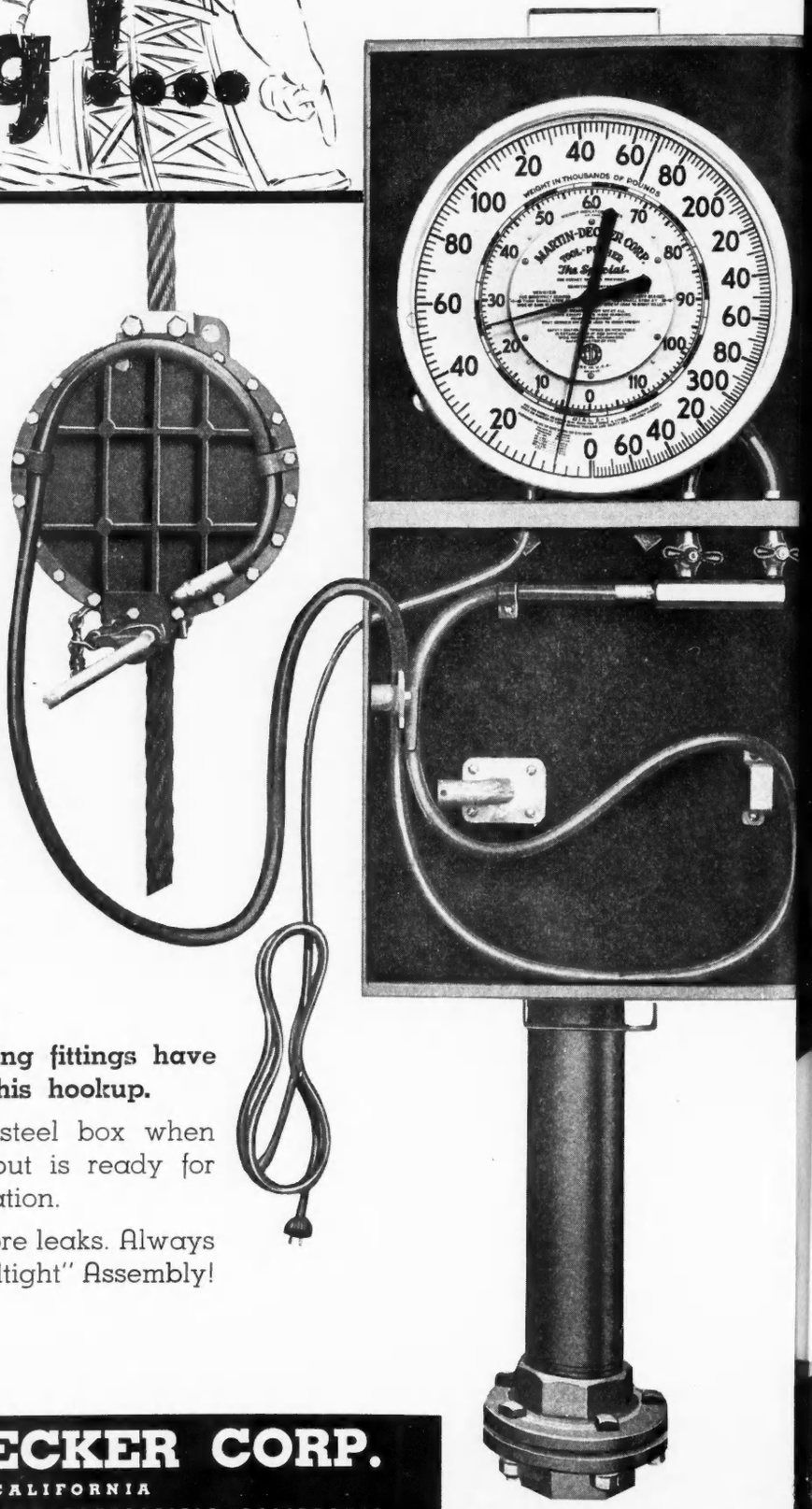
Diamond Coupling on Allsteel oil field tractor winch.

For "ROUGH AN' TOUGH" drilling!....

MARTIN-DECKER "SEALTIGHT" ASSEMBLIES

"Sealtight" means that your weight indicator leak problems are over.

The "Sealtight" Weight Indicator is direct reading, accurately showing the load in thousands of pounds, illuminated with indirect lighting and sealed up permanently so that no pumping or adjusting is necessary from location to location. Simply put the box on a post wherever you want it—in front of the driller or elsewhere—hang the diaphragm on the deadline and your "sealtight" Direct Reading Weight Indicator is in accurate dependable operation.



All copper tubing and copper tubing fittings have been completely eliminated from this hookup.

The entire assembly fits into the steel box when moving from location to location but is ready for instant use for each succeeding location.

Remember, no more pumping, no more leaks. Always ready. That's the Martin-Decker "Sealtight" Assembly!

MARTIN HOME OF THE WEIGHT INDICATOR **DECKER CORP.**

LONG BEACH, CALIFORNIA

SAN JOAQUIN VALLEY: A. F. McQUISTON, BAKERSFIELD, CALIFORNIA
MID-CONTINENT DISTRIBUTOR: REED ROLLER BIT COMPANY, HOUSTON, TEXAS

Your Quintuplex Weight Indicator can "sealtighted" also. Talk to the nearest R or Martin-Decker man.

Tried and proved in hundreds of oil field operations, under practically every condition of operation, the Gray-Kerotest System of well drilling and control has established a new high standard in modern drilling practice.

With this remarkable system, all Drilling, Casing, Cementing, Tubing and Completion Operations are performed through exclusively designed control equipment, thus providing the highest degree of mechanical control known to the industry.

Besides the usual operations, such as drilling, running, cementing and completion, the Gray-Kerotest System makes possible safe drilling under pressure . . . fishing under pressure . . . rotating casing while cementing . . . lowering tubing under pressure . . . setting packers under pressure . . . running tubing inside tubing under pressure . . . producing two formations independently in one well.

No wonder it is recognized as the most successful and versatile system of well control ever perfected. Check the facts and make an amazing discovery in trouble-free well drilling and control.

KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

FREE
Drillers' Wire Rope HANDBOOK

76 pages of valuable information for superintendents, drillers, engineers, purchasing agents. Write for your copy. No charge. No obligation

LOOKING UP!

Up through the steel meshes of this oil derrick—Look! What do you see?

From draw works to crown block, and back again, you see "Flex-Set" Preformed Yellow Strand.

You know that the cable on a rotary rig must be tough—must take it on the chin, and like it. In fact, you know that the only cable that will ever give genuinely economical service is the very best cable you can buy.

That is why oil producers are looking up—up toward higher and higher quality. And they are getting it in "Flex-Set" Preformed Yellow Strand.

Preforming the wires and strands of an already excellent cable has produced new properties that no one cable of standard type has ever possessed—limpness and flexibility without loss of strength, and remarkable resistance to kinking, drum crushing and fatigue.

Looking up through your rotary rig, and seeing "Flex-Set" Preformed Yellow Strand doing the heavy work, is proof positive that the economy of your operation is also looking up.

BRODERICK & BASCOM ROPE CO., ST. LOUIS
Houston Branch: 1311 Palmer St., Houston, Texas
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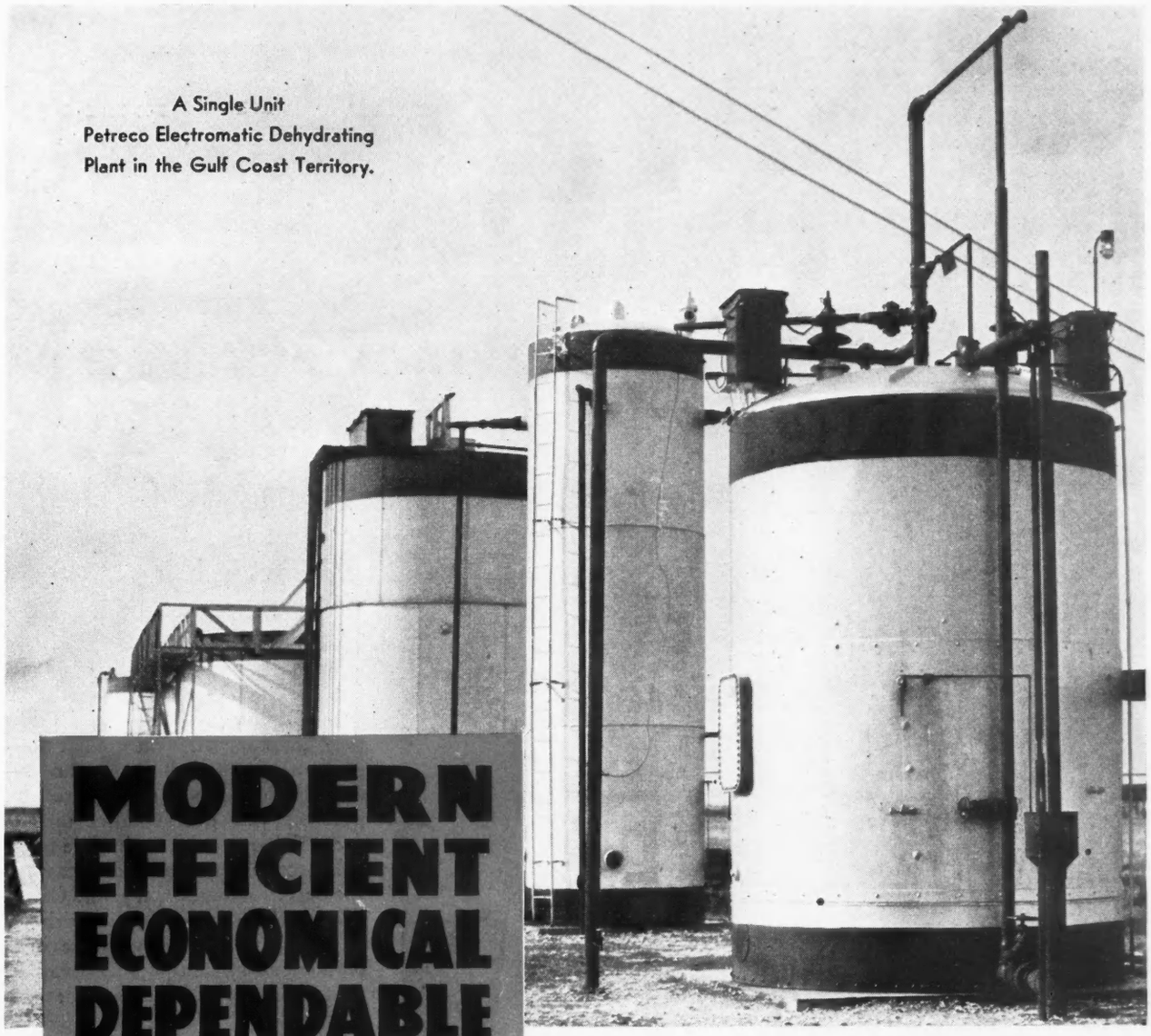
THE CONTINENTAL SUPPLY CO. Mid-Continent and Rocky Mountain Distributors

"Flex-Set" Preformed YELLOW STRAND



A Single Unit
Petreco Electromatic Dehydrating
Plant in the Gulf Coast Territory.

MODERN EFFICIENT ECONOMICAL DEPENDABLE • SAFE •

Modern Petreco electromatic dehydrating plants are the last word in advanced dehydration procedure—the standard of efficient, economical and dependable performance. They consist of single or multiple dehydrator units up to any desired capacity for handling the production from any number of wells; and are adapted to either flow-line, or "batch" treating.

Designed and fabricated in accordance with the API-ASME code, these dehydrator units conform fully to the strictest safety requirements of oil field service. Both control and operation are automatic, and require only an occasional inspection of pumpers and lease men normally employed.

Treating costs per barrel of cleaned oil usually are lower than for other methods; can be accurately estimated before plants are installed; and being fixed, are not subject to wide fluctuations.

If your production is emulsified, investigate Petreco. Our preliminary investigations and advisory service involve no obligation whatever.

PETROLEUM RECTIFYING COMPANY OF CALIFORNIA
General Offices: 530 West Sixth Street, Los Angeles, California
Gulf Coast Headquarters: Houston, Texas
Representatives in Principal Oil Fields and Refining Centers.

OWNERS OF THE
PETRECO
Electro matic
DEHYDRATION and DE-SALTING PROCESSES

A QUIET DRILLER "OPENS UP" ON EXCELLAY

FROM THE DAILY REPORT OF A TIGER BRAND WIRE LINE ENGINEER

Two weeks ago, they switched over to Excellay rotary lines on this rig. Today I asked the morning-tour driller about the new lines.

He's usually a quiet fellow --hard to open up. But you should have heard him spout on Excellay!

"Best lines we've ever used," he said. "They run smooth and fast--never cause a minute's delay. There hasn't been any trouble from twisting."

There was a lot more, but you get the general idea. He couldn't find words enough to say all he wanted. It's things like this, Chief, that make me feel proud to handle Excellay.

Yours, *Bob*

ALWAYS on the job, checking performance, are the American Tiger Brand Wire Line Engineers. These men spend most of their time right out in the field seeing you and thousands of other operators put wire lines through the paces. That's how they know so well what kind of punishment wire lines have to stand — and how to help you get the greatest possible safe performance out of every dollar you invest in wire lines.

Be sure to take full advantage of the services these men offer. Often, because of their close contact with the field, they can give you valuable time- or money-saving tips on operation, as well as practical recommendations on wire lines.

American Tiger Brand Wire Lines are made in all constructions and grades.

Write us for complete information —and ask for one of our engineers to call and check over your lines.

AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York

COLUMBIA STEEL COMPANY
San Francisco

United States Steel Products Company, New York, *Export Distributors*

EXCELLAY *Preformed* **WIRE LINES**

UNITED STATES STEEL

BALDWIN-No. 1 CHOICE FOR DEEP DRILLING

● This is a Stanolind Oil & Gas Company well in Louisiana, drilling (when these pictures were snapped) at about 8600 feet—with plenty more to go. All drives are Baldwin. 1240SS on the power drives and 1030SS handling the rotary table.

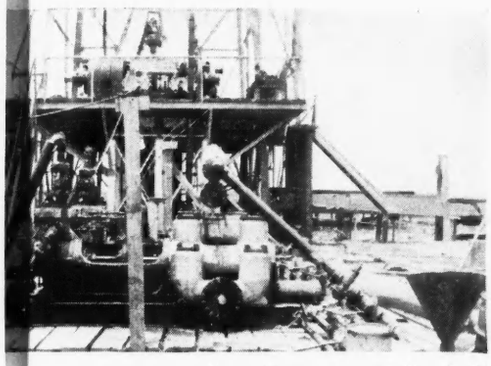
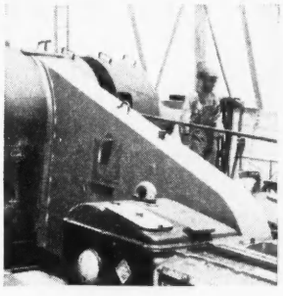
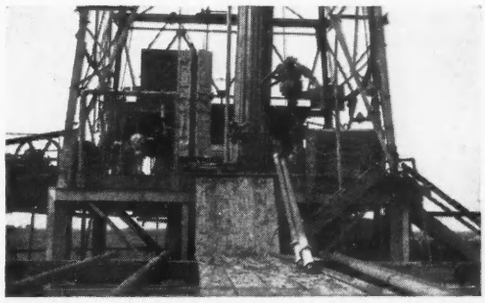


Photo of Stanolind rig now drilling at 8600 feet.



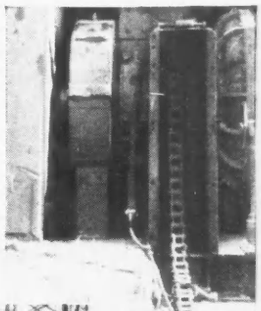
Close-up of power drive. There is a 1240SS Baldwin Chain under that cover.



Here is a shot of the drill pipe being lifted—takes a lot to go down 10,000 feet—and takes a lot of power to handle it.

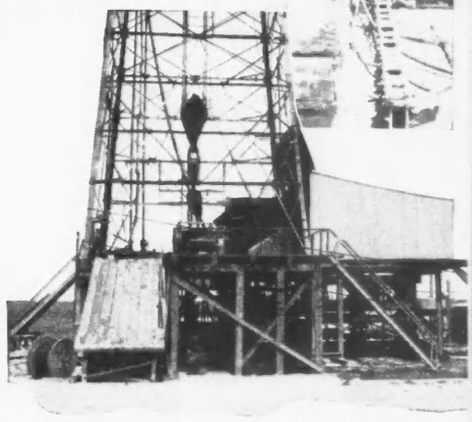
● When you get down around 10,000 feet, you can't afford to take chances on your chain. That's why Union Sulphur Company have this rig 100% equipped with Baldwin Rotary Chain. They use Baldwin 1244SS (with a tensile strength of 185,000 lbs.) for the engine drive, and other Baldwin chains—1240SS and 1030SS to handle the other jobs.

Look sharp and you'll see the 1030SS Baldwin Rotary Chain on the core machine.



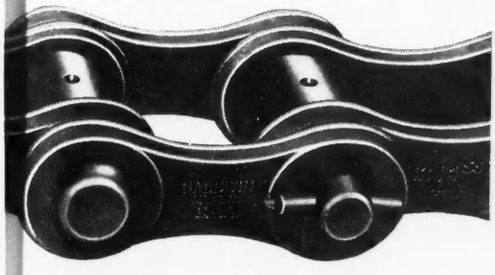
Showing general set-up of this deep well rig.

Baldwin 1030SS rotary table chain still in perfect condition at the 9560 ft. mark.



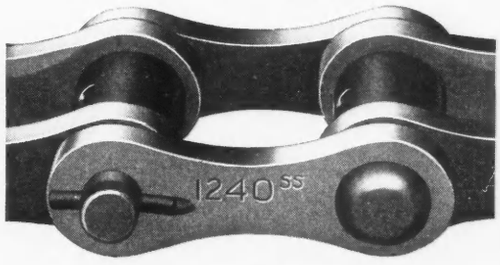
● Present bottom of this well is 9560 feet below the ground. Its owner let us have the photos but doesn't want his name used. He says, though, that other deep drillers may like to know he uses Baldwin D-3125 running in oil bath lubrication on Ideco draw works—and, of course, 1030SS Baldwin Chain for the rotary table.

BALDWIN CHAINS HAVE THE POWER AND STAMINA FOR DEEP DRILLING



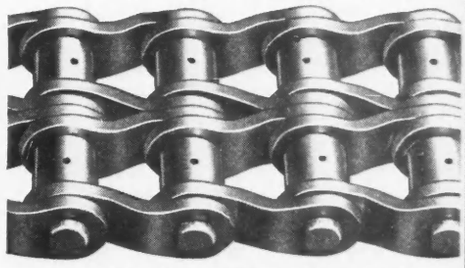
BALDWIN MASTER
1244SS — 185,000 Lbs.

BALDWIN CHAINS DELIVER *ALL* THE POWER . . . *ALL* THE TIME



BALDWIN SUPER SERVICE
1030SS—66,000 Lbs. 1240SS—140,000 Lbs.

WHATEVER YOUR SPECIFIC REQUIREMENTS, YOU WILL FIND THE ANSWER IN THE BALDWIN LINE



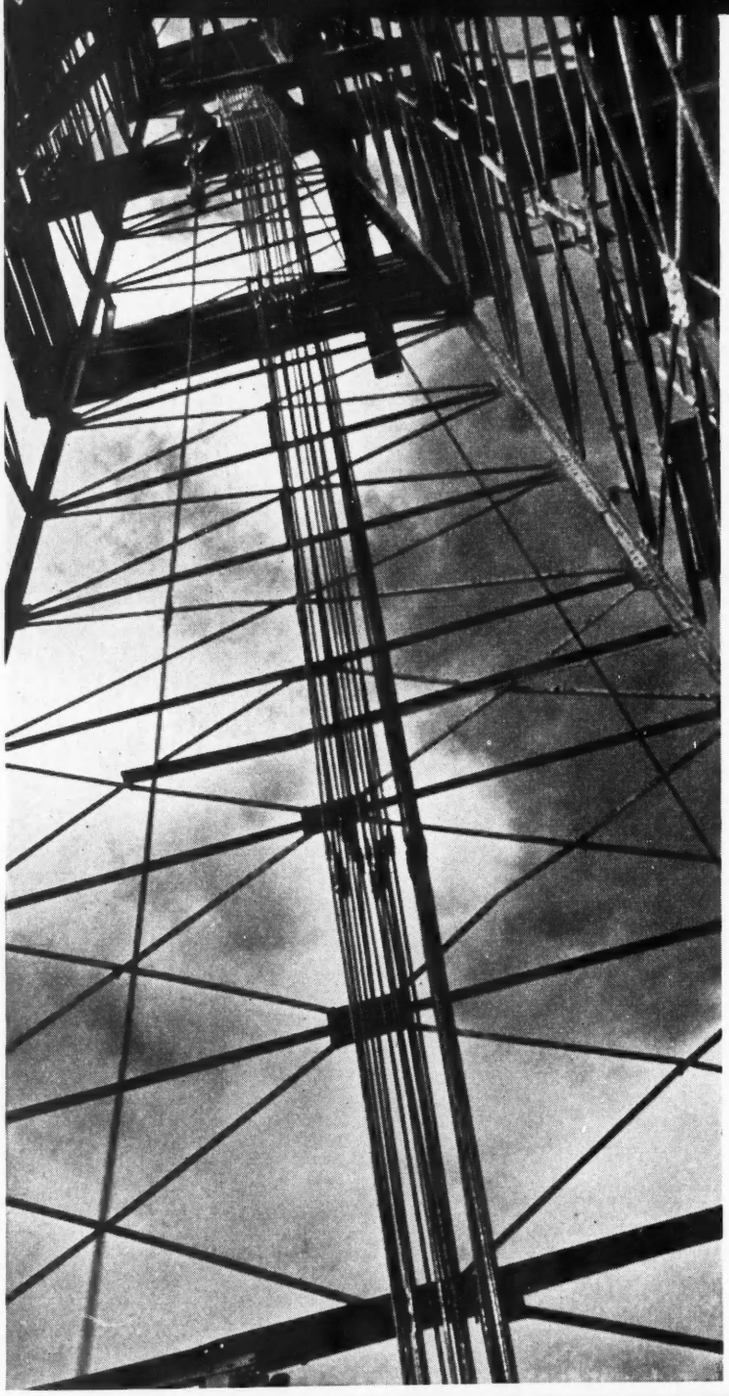
BALDWIN DUAL PURPOSE
No. 3125—115,000 Lbs.
No. D-3125—230,000 Lbs.

BALDWIN

ask the Driller .. He Knows

BALDWIN-DUCKWORTH CHAIN CORPORATION · FACTORIES AT SPRINGFIELD AND WORCESTER, MASS.
Factory Representative: Geo. J. Fix, Dallas, Texas

BETHLEHEM SUCKER RODS



help difficult lifting jobs

REDUCTION of down time is one of the biggest factors in turning a tough lifting job into a profitable operation. And the quality of the steel goes a long way toward effecting this economy.

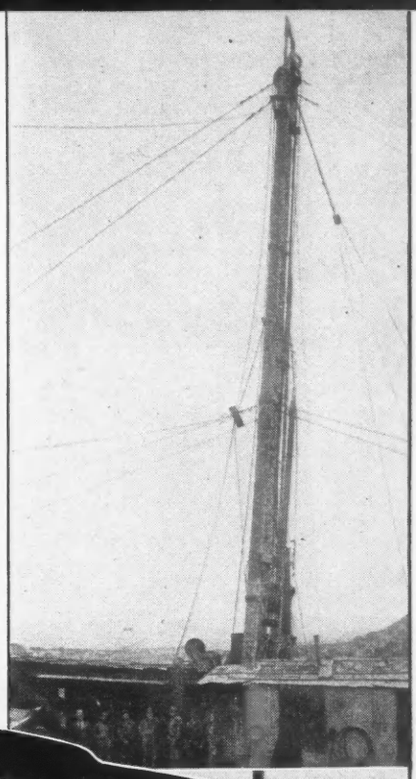
The quality of Bethlehem alloy Sucker Rods is uniformly high. The alloy steel used is the type metallurgists call "balanced." That is, the required physical properties are secured without drastic heat treatment. The elastic properties, ductility and impact values are also properly balanced.

Bethlehem Sucker Rods are made by a company with 50 years of experience in making fine steels, and with intimate knowledge of modern oil field requirements. They are being used by large operators and independents alike in some of the country's toughest lifting jobs. They are effecting economies in every major oil field.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

6,011 ft



FORT WORTH SPUDDER DRILLS ALL THE WAY!

George Callahan, Abilene, Texas, Drilling Contractor, who drilled to a record depth of 6,011 feet and finished in 8" hole with a Jumbo "J" FORT WORTH Spudder in the Union Oil Company of California No. 1, J. D. Pepper, section 51, block 21, T&P survey, Nolan County, Texas.

CASING RECORD
120' 20" casing
880' 15½" casing
1759' 12½" casing
2961' 10" casing
4075' 8¼" casing

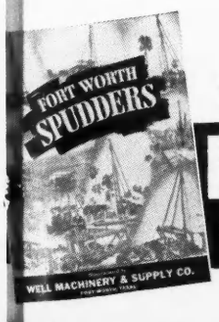
DRILLING to 6,011 feet, finishing in 8" hole with a Jumbo "J" sets another mark in the successful record of FORT WORTH Spudders.

This is further proof that FORT WORTH Spudders have graduated from the class of shallow well drilling.

It is a testimonial to the rugged efficiency of today's modern FORT WORTH Spudders — the leading cable-tool drilling machines.

For all cable-tool work—either deep or shallow drilling, or well maintenance—there is a FORT WORTH Spudder to meet your requirements.

Next time, use a FORT WORTH Spudder!



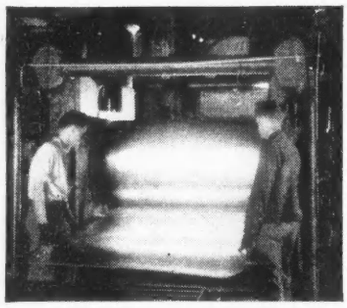
Fort Worth Spudders, built in 10 sizes, are fully described in this catalog. Write for your copy — no obligation.

FORT WORTH SPUDDERS

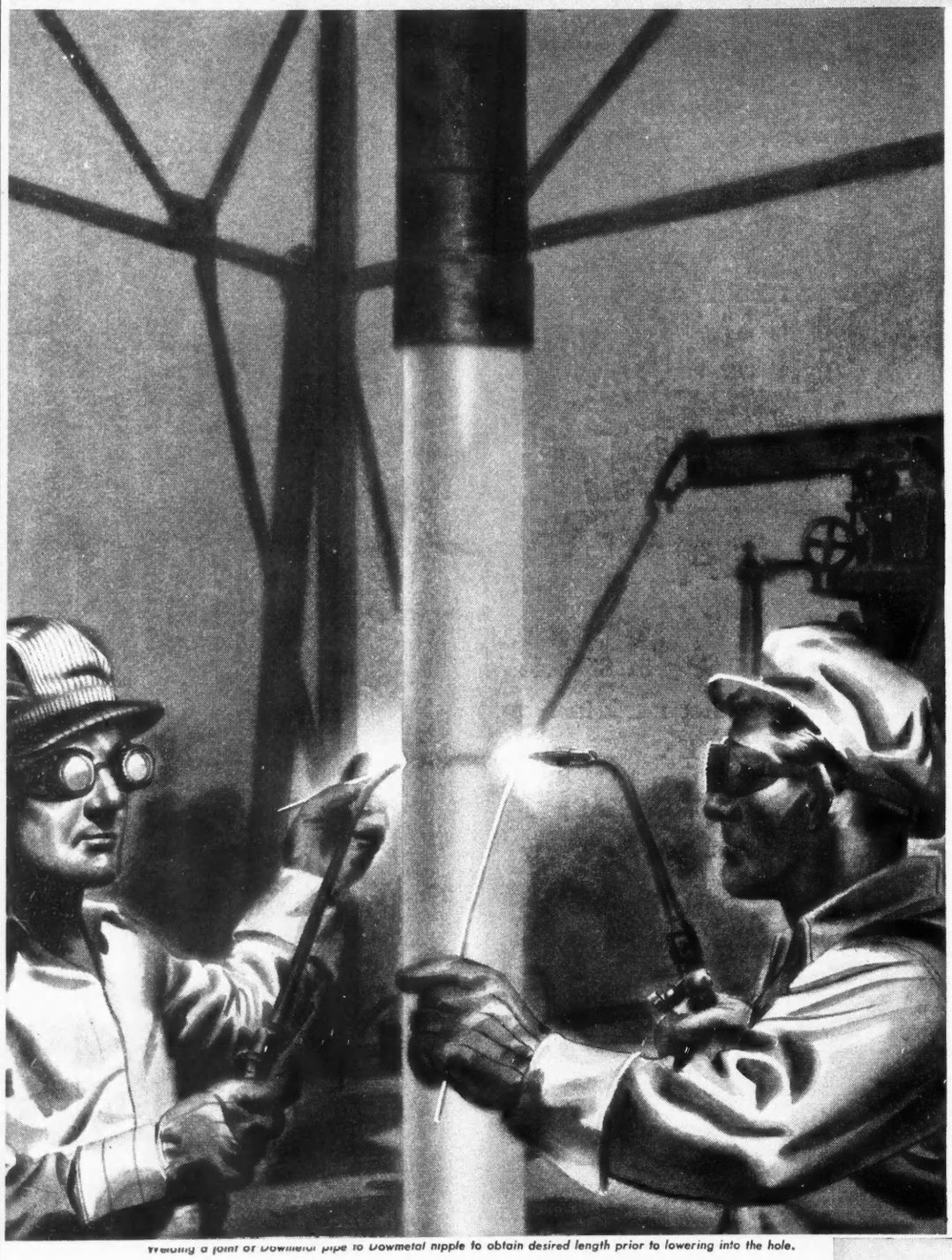
Manufactured by

Well Machinery & Supply Co., Inc. ▲ Fort Worth, Texas

More Hole at Less Cost



Dowmetal, a magnesium alloy developed and manufactured by The Dow Chemical Company, is industry's lightest structural metal. It is a full one-third lighter than aluminum. Engineers redesigning products to eliminate needless weight are constantly finding new and practical uses for Dowmetal. Some of the interesting applications of Dowmetal are its uses as airplane engine parts, radio antenna, bus bodies and chassis, typewriter and vacuum cleaner parts, portable tools, foundry flasks and many other products of equal importance.*



Welding a joint of Dowmetal pipe to Dowmetal nipple to obtain desired length prior to lowering into the hole.

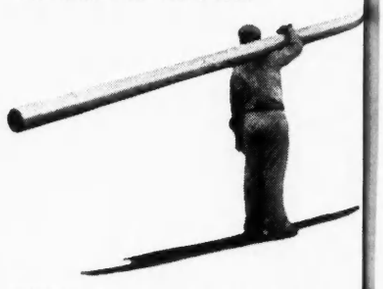
DOWMETAL PIP

A New Dowell Developme

The chemical knowledge that pione the development of over 300 chem products indispensable to industry made possible the method of produ Dowmetal, thereby providing a dom supply of this remarkable alloy. An was Dowell who, through actual f work, perfected the use of Dowm in the oil string of producing wells.

Outstanding characteristics of Dowm are its *complete acid solubility*, eas *welding, lightness* and *strength*. D metal pipe in the oil string, pla opposite an upper pay zone, offers efficiency of completion and produc equaled only by drilling a new h The economical removal of the Dowm section with acid permits full expo of the sand for production.

This new development is typical of many advantages brought about thro Dowell's association with The Chemical Company. These two g organizations work hand in han Dow aiding in the original research development—Dowell collaborating performing the actual field service. combination of forces is recognized major influence in the oil industry . . . 1932 nearly $100,000,000 in addit recovery has been credited to Do methods and materials.



*Trade Mark Reg. U. S. Pat. Off

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KENNEDY BUILDING, TULSA, OKLAHOMA
Subsidiary of THE DOW CHEMICAL COMPANY

Oil men who attend the Golden Gate International Exposition are cordially invited to visit the Dowell exhibit in The Dow Chemical Company Booth.

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